

Scorpaena picta Cuvier

1004

Scorpaena picta (Kuhl and Van Hasselt) Cuvier, Hist. Nat. Poiss., vol. 4, p. ³²¹~~236~~, 1829 (type locality, Java).

— Cantor, Journ. Asiatic. Soc. Bengal, vol. 18, pt. 2, p. 1022, 1849 (1850). (Sea of Pinang).

— Günther, Cat. Fish. Brit. Mus., vol. 2, p. 115⁴, 1860 (Celebes).

— Bleeker, Verslag. Kon. Akad. Wet., Amsterdam, vol. 12, p. 31, 1861 (Singapore).

— Weber, Siboga Exped., vol. 65, Fische, p. 493, 1913 (Savu, Biaru, Karakelang, Binongha, Hua Laut, Tuir).

Parascorpaena picta Bleeker,
Verh. Kon. Akad. Wet., Amsterdam,
vol. 16, no. 2, p. 25, pl. 2, fig. 4, 1876
(Sumatra, Bata, Pinang, Nat,
Singapore, Banca, Java, Bawean,
Bali, Borneo, Celebes, Timor,
Letti). — Fowler, Proc. Acad.
Nat. Sci. Philadelphia, vol. 79,
p. 287, 1927 (Vigan).

1006

Scorpaena polyprion Bleeker,
Verh. Batavia. Genoot. (Perc.),
vol. 22, p. 7, 1849 (type locality,
Boeling, North Bali; Tappanoli,
West Sumatra); Nat. Tijds. Ned.
Indie, vol. 3, p. 444, 1852 (Banka),
p. 717 (Marawang, Banka); vol. 6,
p. 517, 1854 (Telaksan, Sumatra);
vol. 9, p. 65, 1855 (Batu), p. 259
(Sibogha); vol. 12, p. 193, 1856
(Ternate), p. 213 (Lias), p. 230
(Batu); Act. Soc. Sci. Ind.
Nedl., vol. 1, no. 5, p. 5, 1856
(Amboina); vol. 2, no. 7, p. 4, 1857
(Amboina); Nat. Tijds. Ned.
Indie, vol. 13, p. 478, 1857
(Karangbolon, Java), p. 479
(Prigi, Java); Act. Soc. Sci.
Indl. Nedl., vol. 3, no. 4, p. 2, 1857-
58 (Manado, Tanawanko); vol. 3,
no. 9, p. 3, 1857-58 (Trusan,
Sumatra), p. 5 (Siboga); Act.

1007
Loc. Sci. Ind. Neerl., vol. 8
(Sumatra), p. 12, 1859 (Benculen);
Nat. Tijds. Ned. Indie, vol. 19,
p. 331, 1859 (Patejitan, Java),
p. 333 (Karangbollang).

— Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 115, 1860 (Amboyna; Borneo;
Ceylon).
— Bleeker, Nat. Tijds. Ned. Indie,
vol. 22, p. 244, 1860 (Tambelang,
Bawean); Verslag. Kon. Akad.
Wet. Amsterdam, vol. 12, p. 31, 1861
(Singapore); ~~Vers~~ vol. 14, p. 97,
1862 (Ternate); Ned. Tijds. Dierk.,
vol. 1, p. 269, 1863 (Atapuppu,
Timor); Verslag. Kon. Akad.
Wet. Amsterdam, vol. 16, p. 368,
1864 (Aru Islands; Moluccas).

In this species the belly is
usually pale, uniform to whitish,
and the muscular mass
closely banded with black and
white. The species may best
be recognized by its proclitic
spines both sides directed
downward and forward.

Vol. 1, p. 115, 1864 (Günther, *Pisces*;
Europe);
Fishes, vol. 2, p. 24, 1864 (Günther,
vol. 2, p. 24, 1864 (Günther,
Europe);
Wet., *Amsterdam*, vol. 12, p. 31, 1861
(Günther);
1864 (Günther);
vol. 1, p. 264, 1863 (Günther,
Europe);
Wet., *Amsterdam*, vol. 16, p. 369,
1869 (Günther, *Pisces*;
Europe);
vol. 1, p. 264, 1863 (Günther,
Europe);

21933 to 21935

1009

[1611]. Batan Island. June

5, 1909. Length ⁷²85 to ¹⁰⁵88 mm. Five ~~four~~ examples.

Seven examples. Canino Island near Oaet, tide pool. June 15, 1909. Length 44 to 108 mm.

One example. Maatan tide pool. August 31, 1909. Length 33 mm.

14554. Maculabo. June 14, 1909. Length 105 mm.

One example. Tataan, Simalue Island. February 20, 1908. Length 18 mm.

One example. Tomahu Island, tide pools. December 11, 1909. Length 37 mm.

21913. Sirinao Island Reef. December 31, 1908. Length 111 mm.

Scorpaena

~~Sebastichthys~~ rhodochrous (Günther)

Sebastes rhodochrous Günther, Proc.

Zool. Soc. London, p. 659, 1871 (type
locality, Manado, Celebes).

Sebastichthys rhodochrous Bleeker,

Vierh. Kon. Akad. Wet. Amsterdam,
vol. 16, no. 2, p. 19, 1876 (copied).

A 556. Tulade Island. - September 18, 1909. Length 278 mm. Side of body brown, darker stripes longitudinally. Side of head without markings. Black oblong blotch behind gill opening. Caudal spine with orange socket. One or 2 obscure bars near edge of dorsal and anal, most distinct posteriorly; anal with distinct purple edge, dorsal similar but very much narrower. Caudal with distinct white basal bar.

A 558. Tulade Island. September 17, 1909. Length 310 mm.

8575. Talijit Island, Buang Bay. March 15, 1909. Length 310 mm. Body very finely striped with purplish blue

Depth 3; head 2. Snout longer than eye; eye 4 in head; palatine teeth form a narrow band; interorbital space deeply concave; very narrow, width $\frac{1}{3}$ of eye; no groove on occiput. Spines of head prominent, acute; supraorbital margin with 1 spine in front and 2 behind; infraorbital with a single ridge armed with 4 spines.

Scales 48 in lateral line. Occiput naked, cheek and opercle scaly.

D. XII, 9, spines strong, third, fourth and fifth longest, but only little longer than eye, eleventh considerably shorter than twelfth; A. III, 5, second spine stronger and longer than third, and $\frac{1}{3}$ of head; caudal truncated; pectoral reaches anal.

Red, upper parts of fish
irregularly marbled with
blackish. Large black spot
between seventh and tenth dorsal
spines on the base. All other fins
nearly uniform red. Pharynx
with scarcely any blackish spots.
Length 200 mm. (Günther.)
East Indies.

1013

Scorpaena izensis Jordan and
Starks

Scorpaena izensis Jordan and
Starks, Proc. U. S. Nat. Mus., vol.
27, p. 134, fig. 10, 1904 (type
locality, Kuruma Bay; Totomi
Bay; Sagami Bay; 45 to 100
fathoms). — Franz, Abhand.
Kon. Bayer. Akad. Wiss., vol. 4,
Suppl. Band 1, p. 72, 1910 (Sagami
Bay). — Izuka and Matsura,
Cat. Zool. Spec. Tokyo Mus.,
Vertebr., p. 128, 1920 (Ajiro, Izu).
— Jordan and Starks, Mem.
Carnegie Mus., vol. 10, no. 2, p. 272,
June 27, 1925 (Misaki; Miyazu).

Depth $2\frac{5}{6}$ to $3\frac{1}{6}$; head $2\frac{1}{5}$ to $2\frac{1}{3}$, width $1\frac{3}{5}$ to $1\frac{4}{5}$. Snout $3\frac{1}{5}$ to $3\frac{2}{5}$ in head from snout tip; eye 5 to 6, $1\frac{1}{2}$ to $1\frac{4}{5}$ in snout, little greater than interorbital in young, subequal with age; orbit 5 in head; maxillary reaches $\frac{1}{2}$ to $\frac{2}{5}$ in eye, expansion 1 to $1\frac{2}{5}$ in eye, length 2 to $2\frac{1}{10}$ in head from snout tip; teeth minutely villiform, in bands in jaws, in very narrow bands on vomer and palatines; interorbital $5\frac{4}{5}$ to 6, deeply concave. Gill rakers 6 + 10, of which 4 above and below rudimentary tubercles; robust, $1\frac{1}{2}$ in gill filaments, which $2\frac{1}{5}$ in orbit. Pair of nasal spines; 3 supraorbital spines, 2 posterior closer; pair of small

coronal, and pair of supraoccipital and nuchal, both larger; 2 groups of small postoculars, followed by 2 long spines, then small spine close above last and finally large suprascapular; 3 preorbitals, posterior largest; suborbital stay with 3 spines; 5 preopercular spines, uppermost largest and with well developed basal one in front; 2 opercular spines, lower little posterior.

Scales $30 + 2$ close along and above lateral line; tubular scales $21 + 1$ in lateral line; 5 scales above lateral line, 14 below, 6 predorsal. Broad flap, fringed, behind front nostril, another from second supraorbital spine, one from third spine; long flap nearly long as eye from

1016

posterior preorbital spine; broad flap from each of 2 lowest preopercular spines, small ones from most of all other spines of head and various areas of head; row of flaps along lateral line. Ventrals pre-head, breast, chest and pre-pectoral region naked. Scales with 8 or 9 basal radiating striae; 37 to 44 subequal uniform slender apical denticles; circuli fine.

D. XII, 9, I, third spine $2\frac{1}{3}$ to $2\frac{2}{5}$ in total head length; third ray $2\frac{2}{5}$ to $2\frac{2}{3}$; A. III, 5, I, second spine $2\frac{1}{2}$ to $3\frac{1}{4}$, second ray $2\frac{2}{5}$ to $2\frac{1}{2}$; caudal $1\frac{3}{5}$ to $1\frac{3}{4}$, convex behind; least depth of caudal peduncle $4\frac{1}{3}$ to $4\frac{2}{3}$; pectoral $1\frac{3}{4}$ to $1\frac{4}{5}$, rays I, 9, I,

1017

rounded shiny flap in axil;
ventral rays I, 5, fin 2 in total
head length.

Dull brown generally, with
several large variable blotches
of deep brown on back and
sides above, lighter intervening
areas contrasted; first dark
blotch at predorsal; second
at middle of spinous dorsal
and like first encroaches on
base of fin; dark blotch on
hind dorsal spines; one
under middle of soft dorsal.
Dark band across snout and
one on interorbital. Iris pale.
Fins light; some dark blotches
of spinous dorsal; soft
vertical fins and pectoral with
small scattered dark brown
spots. Pectoral axil pale, with

variable dark cloudings.
Japan.

U. S. N. M., no. 49510. Tokyo.
Albatross Collection. Length 163
mm. As Scorpaena fimbriata.

U. S. N. M., no. 50909. Suruga
Bay. Albatross Collection, 1908.
Length 253. Type.

U. S. N. M., no. 51242. Japan.
Albatross Collection. Length 127 to
144 mm. Two examples.

U. S. N. M., no. 51266. Japan.
Albatross Collection. Length 43 mm.
Dry specimen.

U. S. N. M., no. 51278. Sagami
Bay, Japan. O. S. Jordan and
J. D. Snyder. Length 200 mm.
As Scorpaena fimbriata.

U. S. N. M., No. 51279. Suruga Bay. Albatross Collection, 1900. Length 93 to 188 mm. Four examples. Paratypes.

U. S. N. M., No. 51280. Suruga Bay. Albatross Collection. Length 187 mm. As Scorpaena fimbriata. Variegated with whitish, also flaps whitish.

U. S. N. M., No. 51392. Sagami Bay. Albatross Collection (3754). May 19, 1909. Length 65 mm.

Scorpaena cookii Günther

Scorpaena cookii Günther, Journ.
Mus. Godeffroy, vol. 3, p. 78, pl.
55, 1874 (type locality, Raoul
Island).

Jordan and Seale, Bull. Bur.
Fishes, vol. 25, p. 376, 1905 (1906)
(reference).

Scorpaena cookii Ogilby, Mem.
Austral. Mus., no. 2, p. 59, 1889
(Admiralty Islet, Lord Howe
Island).

(102)

Depth $3\frac{1}{4}$; head $2\frac{1}{3}$. Snout $3\frac{2}{3}$
in head from snout tip; eye $4\frac{7}{8}$,
 $1\frac{1}{3}$ in snout, greater than
interorbital; maxillary reaches
opposite hind eye edge, expansion
 $1\frac{4}{5}$ in eye, length $2\frac{1}{6}$ in head
from snout tip; small elongate
band of palatine teeth; inter-
orbital $1\frac{7}{8}$ in eye, concave.

nasal spine present; 1
antero-supraorbital spine and
2 close set postero-supraorbitals,
followed by pairs of coronals,
parietals and occipitals;
3 postocular spines followed
by suprascapular; preorbital
with spine and 4 spines along
ridge of suborbital stay,
followed by 1 on preopercle,
and 3 smaller points on preopercle
edge below; 2 opercular spines,

divergent, -opposite; strong humeral spine.

1022

Scales 65 in lateral line; 8 above, 17 below. Head scaleless. Small scales on prepectoral region, chest and breast. Short flaps on pre-orbital, lower edge of preopercle, cheek and 5 widely spaced along middle of lateral line.

D. XII, 9, third spine 3 in total head length, third ray $2\frac{4}{7}$; A. III, 5, second spine 3, third ray $2\frac{1}{4}$; caudal $1\frac{4}{5}$, convex behind; least depth of caudal peduncle $4\frac{1}{2}$; pectoral $1\frac{7}{8}$, rays I, 6, XI; ventral I, 5, length $2\frac{1}{6}$ in total head length.

Body brown, with dark spots and marblings, finer on

head. Cheek dark. Along back ¹⁰²³
4 large blackish blotches and
another at caudal base. Iris
greenish, with dark radiating
spots or bars. Shining flaps
contrasted whitish. Fins light
brown, with dark markings
as blotches or spots, formed
as imperfect bands or rows
of spots. Length 250 mm.
(Günther.)

Raoul Island, Lord Howe
Island.

1024

Genus Ruboralga Whitley

Ruboralga Whitley, Austral.
Zoologist, vol. 6, pt. 4, p. 326.
February 13, 1931. (Type
Scorpaena jacksonensis
Steindachner, orthotypic.)

Palatine and vomerine teeth present. Orbital crests and suborbital bony stay with several spines. Lower part of opercle naked. Dorsal spines 12, none greatly produced, all united by membrane for greater part of length. Second anal spine longer than third. Coloration mainly reddish.

Said to differ from Scorpaena in "a very different facies".

1025

Ruboralga bellicosa (Castelnau)

Scorpaena bellicosa Castelnau,
(Res. Fish. Australia) Victor.
Offic. Rec. Philadelphia Exhib.,
p. 17, 1875. (type locality, Nichol
Bay, Western Australia). —
Macleay, Proc. Linn. Soc. New South
Wales, vol. 5, 1881 p. 433, 1881
(~~copied~~ Queensland). — McCulloch
and Whitley, Mem. Queens-
land Mus., vol. 8, pt. 2, p. 163.
July 7, 1925 (reference). — McCulloch,
Austral. Mus. Mem.,
no. 5, pt. 3, p. 385, Nov. 28, 1929
(reference).

1026

Rubralga cardinalis (Richardson)

Scorpaena cardinalis Richardson,
Ann. Mag. Nat. Hist., London,
vol. 9, p. 212, May 1842 (Type
locality, Australia).
Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 116, 1860 (Australia).
— Macleay, Proc. Linn. Soc. New
South Wales, vol. 5, p. 431, 1881
(Port Jackson).

Saville -
— Kent, Great Barrier Reef, p. .
1893 (Queensland).

— Ogilby, Commerc. Fish. Fisher. Queens-
land, Sp., 1915 (Moreton Bay).

— McCulloch and Whitley, Mem.
Queensland Mus., vol. 8, pt. 2, p.
 163, July 7, 1925 (reference).

— McCulloch, Austral. Mus.
Mem., no. 5, pt. 3, p. 385, Nov. 28,
 1929 (reference); Fish. New South
Wales, ed. 3, p. 90, pl. 38, fig. 335a,
 1934.

Zebrasoma veliferum (Block).

Acanthurus velifer Block, Naturg. Mus. Fische,

band 9, 1795, p. 106, plate 427, fig. 1. No locality.

(Collection M. John). — Rüppell, Atlas Reise

nordl. Afr. Fische, 1828, p. 58, plate 15, fig. 2

(Mohila). — Valenciennes, Hist. nat. Poiss., vol.

10, 1835, p. ²⁵¹484 (Mauritius, East Indies, Red Sea).

— Bleeker, Nat. Tijds. Ned. Indië, deel 6, 1854,

p. 518 (Cocor Island); deel 7, 1854, p. (38)42

(Cocor Island); deel 8, 1855, p. 306 (Batoe

Island). — Günther, Cat. Fish. Brit. Mus.,

vol. 3, 1861, p. 344 (Fiji). — Playfair, Fishes of

Zanzibar, 1866, p. 57 (Zanzibar). — Klunzinger,

Verh. zool. bot. Ges. Wien, band 21, 1871, p. 505

(Red Sea). — Day, Fishes of India, pt. 1, 1875,

p. 207. — Von Martens, Verh. zool. bot. Ges. Wien,

band 16, 1866, p. 378 (Koseir, Red Sea). — Day,

Fauna. British India, vol. 2, 1889, p. 144 (Andaman

Islands). — Thurston, Gov. Central Mus. Madras

Ruboralga jacksoniensis Whitley,
Austral. zoologist, vol. 6, pt. 4, p.
326, February 13, 1931 (reference).

1030

Rubor alga ergastulorum (Richardson)

Scorpaena ergastulorum Richardson,
Ann. Mag. Nat. Hist., London,
vol. 9, p. 217, May 1842 (type
locality, Port Arthur, Tasmania).

— McCulloch, Austral. Mus. Mem.,
no. 5, pt. 3, p. 383, Nov. 28, 1929
(reference).

~~Scorpaena cruenta Richardson~~

Scorpaena cruenta Richardson,
Ann. Mag. Nat. Hist., London, vol.
9, p. 217, May 1842 (type locality:
~~Cape Kidnapper, New Zealand~~
~~Port Arthur, Tasmania~~). —
Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 112, 1860 (type).

— Schmeltz, Cat. Mus. Godeffroy, no. 4,
p. 16, 1869 (South Pacific).

— Macleay, Proc. Linn. Soc. New South
Wales, vol. 5, p. 438, 1881 (Tasmania;
Port Phillip; Port Jackson).

— Saville Kent, Great Barrier Reef. p. 1032
1893 (Queensland).

— Fowler, Proc. Acad. Nat. Sci.
Philadelphia, vol. 75, p. 44, 1923
(Victoria, Australia).

— McCulloch and Whitley, Mem. Queens-
land Mus., vol. 8, pt. 2, p. 163, July 7,
1925 (reference).

— Fowler, Mem. Bishop Mus., vol. 10,
p. 285, 1928 (reference). — McCulloch,
Austral. Mus. Mem., no. 5, pt. 3,
p. 385, Nov. 28, 1929 (reference).

Scorpaena militaris Richardson,
 Trans. Zool. Soc. London, vol. 3,
 pt. 1, p. 90, 1842 (type locality:
 Van Diemen's Land); Zool. Voy.
Erebus and Terror, Fish.,
 p. 22, pl. 14, March 1, 1845.

Scorpaena miles (not Bennett
 1828) Richardson, Rep. Twelfth
 meet. Brit. Assoc. Adv. Sci.,
 p. 18, 1842 (late 1843) (error).

Length to $3\frac{1}{2}$; head $2\frac{1}{5}$ to $2\frac{1}{3}$,
 width to $1\frac{1}{2}$. Snout $1\frac{1}{2}$ to 3 .
 In snout 4 or 5 "lips" of
 $4\frac{1}{2}$ to $4\frac{1}{4}$, $1\frac{1}{2}$ to $1\frac{1}{4}$ in head,
 generally 20 or 22 "interorbital";
 from 4 to 4 $\frac{1}{2}$ in head from
 lower lips; none in any other $\frac{1}{5}$ -
 line in any young. Head
 covered from snout to occiput in
 $1\frac{1}{5}$ to $1\frac{1}{4}$ in young, length to
 $2\frac{1}{10}$ in head from lower lips;
 with an irregular row of
 four or five large conical scales
 with a small sharp tooth on each
 body section; interorbital 6 $\frac{1}{2}$
 to 7, deeply concave. Side scales
 7 to 10, of which 2 or 3 are
 almost twice as long as broad;
 $1\frac{1}{2}$ on side of a scale or $2\frac{1}{2}$ in
 eye. Skin of snout much
 spined; 2 supraorbital spines,

with second and third closer and posterior; pair of moderate, triangularly compressed erect coronals, pair of larger occipitals followed by nuchals, and rather deep oblong depression between coronals; cluster of 3 small postoculars superiorly, followed by 2 long postoculars which end in 3 points above, and small spine over last; strong spine at suprascapula; 3 preorbital spines, posterior largest and directed down; 2 or 3 spines on preorbital median horizontal keel, followed by 3 large spines on suborbital stay; 5 preopercle spines, uppermost largest, with strong spine at its base in front; 2 opercular

spines, opposite and upper directed obliquely upward and backward; strong spine on humerus.

Scales 40 or 41 + 3 or 4 close along and above lateral line; tubular scales 23 or 24 + 1 in lateral line; 5 scales above lateral line, 17 or 18 below, 5 or 6 predorsal. Shiny flap from second supraorbital spine $\frac{2}{3}$ of eye, fringed flap from hind nostril, 3 from preorbital spines, of which posterior longest; various flaps on head, fins and on body, especially along lateral line. Head, breast and chest naked, also prepectoral region. Scales with 9 to 13 basal radiating striae; 15 to 30 slender apical denticles; circuli fine,

coarser apically.

D. XIII, 9, I, third spine $2\frac{1}{3}$ to $2\frac{2}{3}$ in total head length, third ray $2\frac{1}{2}$ to $2\frac{2}{3}$; A. III, 5, I, second spine $2\frac{3}{5}$ to $3\frac{1}{5}$, second ray $2\frac{1}{4}$ to $2\frac{1}{3}$; caudal $1\frac{3}{5}$ to $1\frac{7}{8}$, hind edge convex, least depth of caudal peduncle $4\frac{1}{2}$ to $4\frac{3}{5}$; pectoral $1\frac{4}{5}$ to $1\frac{5}{6}$, rays I, 4 or 5, X or XI; ventral I, 5, fin $1\frac{7}{8}$ to 2 in head from snout tip.

Brown generally, little paler to whitish on under surfaces of head and body. Obscure dark mottling and dark brown blotches on head and body. Usually dark blotch on cheek below. Iris brown. Jaws with brown spots. Fins all more or less blotched,

spotted and speckled with darker. Dark blotch at front of soft dorsal. Caudal with broad, transverse dark band and narrower one at caudal basally. Anal with dark transverse band. Pectoral pale, with dark spots above, ventral whitish.

U. S. N. M., No. 12601. Australia.
British Museum. Length 230 to
240 mm. Two examples. These
specimens are Scorpaena bynoensis,
but with the posterior preopercle
spine directed downward.

U. S. N. M., No. 47759. Port
Jackson. Australian Museum.
Length 270 to 284 mm. Two
examples. Scales 41 to 47 + 4 or 5.
As Scorpaena cardinalis.

U. S. N. M., No. 47832. Broken
Bay, New South Wales. Australian
Museum. Length 237 to 252 mm.
Two examples.

U. S. N. M., No. 39664. New
Zealand. Otago Museum. Length
188 mm.

U. S. N. M., No. 59958. Port Jackson.
D. G. Stead. Length 138 to 158 mm.
Two examples.

1040
U. S. N. M., No. 82986 - New South
Wales. Wilkes Exploring Expedition.
Length 200? mm.

1041

Ruboralga sumptuosa (Castelnau)

Scorpaena sumptuosa Castelnau,
(Res. Fish. Austral.) Victor.
Offic. Rec. Philadelphia Exhib.,
p. 17, 1875 (type locality,
Fremantle). — Macleay, Proc.
Linn. Soc. New South Wales, vol.
5, p. 432, 1881 (copied).

— McCulloch, Austral. Mus.
Mem., no. 5, pt. 3, p. 384, Nov. 28,
1929 (reference).

Genus Scorpaenopsis Heckel

Scorpaenopsis Heckel, Ann. Wiener
Mus., vol. 2, p. 159, 1840. (Type
Scorpaena mesocephala Cuvier,
Scorpaena gibbosa Schneider,
designated by Bleeker, Verh.
Kon. Akad. Wet. Amsterdam,
vol. 16, no. 2, p. 4, 1876.)

Scorpaenichthys (not Grandidier
1854) Bleeker, Nat. Tijds. Ned.
Indie, vol. 11, p. 402, 1856. (Type
Scorpaena gibbosa Schneider.)

Body oblong, compressed. Head
 very large, robust, ^{ridges} ~~irregular~~
~~with~~ ^{with} ~~irregular~~ ^{irregular} ~~ridges~~
 a large one. Snout rather long.
 Eye elevated, usually small,
 mostly premedian fin head.
 Mouth large, little inclined and
 lower jaw usually protruded.
 Maxillary extends below eye,
 expanded terminally. Teeth in
 jaws and on vomer, none on
 palatines. Occipital depression
 more or less deep. Armature
 of head strong. Branchiostegals 7.
 Scales variable, 30 to 60 in
 lateral row, mostly ctenoid.
 Head scaly. Head and body
 with numerous flaps and
 filaments. Dorsals and anals
 scaleless. Dorsal continuous,
 strong spines 12, rays 9 or 10.
 Anals with 3 strong spines.

1044

Caudal rounded. Pectoral large, with broad base, lower rays simple. Ventral small.

Curious fishes, remarkable for their large rough heads, variegated coloration, and living about coral reefs. They differ from Scorpaena chiefly in the absence of palatine teeth and in having only one preorbital spine usually projecting down over the maxillary.

(Neoplatyphium Heekel)
Analysis of Species

1050

a.¹ Cranial pit or depression shallow.

b.¹ Scales 50 to 60 in lateral line.

cirrhosus.

b.² Scales 40 to 45 in lateral line.

novae-guineae.

a.² Cranial pit deep.

c.¹ Scales 30 to 36 in lateral line.

(d.³ Black blotch
on spinous dorsal;
dozen black spots in
pectoral axil.
maculidorsalis.)

d.¹ Light brown, mottled darker;
white spots on lower side of
head. cottoides.

d.² Dark predorsal blotch and
black band connects second
dorsal and anal; caudal with
2 blackish cross bands. cypho.

c.² Scales 40 to 45 in lateral line.

e.¹ Dorsal spines higher than
soft rays. alteriostus.

e.² Dorsal spines lower than
soft rays. gibbosus.

1051

Scorpaenopsis cirrhosa (Thunberg)

Perca cirrhosa Thunberg, Nya Handl.
Stockholm, vol. 14, p. 199, pl. 7, lower
fig., 1793 (type locality, Japan).

Scorpaena cirrhosa Cuvier, Hist. Nat.
Poiss., vol. 4, p. 318, 1829 (Japan;
Malabar). — Schlegel, Fauna
Japonica, Poiss., pts. 2-4, p. 42, pl.
17, figs. 2-3, 1843 (Nagasaki). —
Bleeker, Verh. Batavia. Genoots.
(Nal. Ichth. Japan), vol. 25, p. 11, 1853
(reference); (Nal. Ichth. Bengal),
vol. 25, p. 36, 1853 (reference);
(Nal. Ichth. Japan), vol. 26, pp. 5, 79,
1857 (Nagasaki).

1052

— Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 120, 1860 (China, Japan,
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vol. 2, p. 273, 1868 (Ternate); Ned.
Tijds. Dierk., vol. 1, p. 228, 1863
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Ichth. China and Japan, p. 216,
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Scorpaenopsis leonina Borodin,
Bull. Vanderbilt Mar. Mus., vol. 1,
art. 1, p. 89, 1932 (Venus Point,
Tahiti, Society Islands).

1059

Scorpaena oxycephalus Bleeker,
Verh. Batavia. Genoot. (Perc.),
vol. 22, p. 7, 1849 (type locality,
Batavia, Java); Nat. Tijds.
Ind. Indie, vol. 9, p. 282, 1855
(Macassar); Act. Soc. Sci. Ind.
Ned. Ind., vol. 1, no. 5, p. 5, 1856
(Amboina).

Scorpaenodes oxycephalus Bleeker,
Nat. Tijds. Ind. Indie, vol. 13, p.
479, 1857 (Prigi, Java); vol. 15,
p. 220, 1858 (Biliton); Act. Soc.
Sci. Ind. Ned. Ind., vol. 2, no. 7, p. 4,
1857 (Amboina); vol. 3, no. 9, p.
5, 1857-58 (Priaman, Sumatra).

1060

Scorpaenopsis oxycephalus Bleeker,
Nat. Tijds. Ned. Indie, vol. 17, p. 142,
1858-59 (Boeling, Bali); vol. 18,
p. 353, 1859 (Bawean); vol. 20,
p. 129, 1859-60 (Boni), p. 141
(Badjoea, Boni), p. 206 (Boeling);
Verslag. Kon. Akad. Wet., Amsterdam,
vol. 15, p. 20, 1863 (Hitu, Amboina);
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(Manila Bay); Verh. Kon. Akad.
Wet., Amsterdam, vol. 16, no. 2, p.
30, pl. 5, fig. 3, 1876 (Java;
Sumatra; Bawean; Bali; Celebes;
Ceram; Amboina). — Fowler,
Journ. Acad. Nat. Sci. Philadelphia,
ser. 2, vol. 12, p. 548, 1904 (Padang).

1061

Scorpaena durbanensis Gilchrist
and Thompson, Ann. South African
Mus., vol. 6, p. 236, 1908-10 (type
locality, Natal; Durban); Ann.
Durban Mus., vol. 1, pt. 4, p. 407, 1917
(reference). ~~→ Fowler, Proc. Acad.
Nat. Sci. Philadelphia, vol. 77, p.
253, 1925 (Bluff southeast, Natal
Coast).~~

Scorpaenopsis marmoratus van Bonde,
Rep. Fisher. Mar. Biol. Surv. South
Africa, vol. 3, pt. 1, p. 30, pl. 7, 1924
(type locality, Natal).

Depth $3\frac{3}{5}$; head $2\frac{2}{5}$, width $1\frac{3}{4}$.
Snout $3\frac{1}{10}$ in head from snout tip; eye $6\frac{1}{8}$, 2 in snout, greater than interorbital; maxillary reaches $\frac{1}{4}$ in eye, expansion equals eye, length 2 in head from snout tip; villiform bands of teeth in jaws, and on vomer, none on palatines; bony interorbital 7 in head from snout tip. Gill rakers 5 + 10, low tubercles.

Scales 48 in lateral line to caudal base; tubular scales 25 + 2 in lateral line; 7 scales above, 20 below; 6 predorsal. No supraorbital flap. Scales with 6 to 12 basal striae; 60 to 68 apical points, with 3 to 7 transverse series.

1063

D. XI, 10, fourth spine $2\frac{1}{2}$ in total head length, third ray $2\frac{3}{5}$; A. III, 5, second spine $2\frac{3}{5}$, second ray $2\frac{1}{10}$; caudal $1\frac{3}{4}$, rounded behind; pectoral $1\frac{1}{2}$; ventral $1\frac{4}{5}$.

Brown above, whitish below. Chiefly blotched and clouded with dusky, also finely mottled with various darker shades. Fins with wavy dusky lines and bands or blotches. Blackish marginal blotch over seventh to tenth spinous dorsal membranes. Paired fins with wavy streaks of brown and dusky.

Red Sea, Natal, Malaya, East Indies, Philippines, China, Japan, Polynesia.

U. S. N. M., No. 51244. Nagasaki.¹⁰⁶⁴
D. S. Jordan and J. O. Snyder.
Length 284 mm.

U. S. N. M., No. 51248. Wakanoura.
D. S. Jordan and J. O. Snyder.
Length 233 mm. Scales 45 + 3.

~~U. S. N. M., No. 51244. Nagasaki.~~
~~D. S. Jordan and J. O. Snyder.~~
~~Length 284 mm.~~

U. S. N. M., No. 57646. Japan.
P. L. Jouy. Length 127 to 230 mm.
Four examples.

A. n. S. P., one example. Padang.

A. C. Harrison and H. L. Hiller.

Length 98 mm. Depth 3; head $2\frac{1}{3}$.
Snout $3\frac{5}{6}$ in head; eye $4\frac{1}{10}$;
maxillary 2; interorbital $6\frac{2}{5}$.
Scales 42 along lateral line;
pores 22 in lateral line, D. XII,
10; A. III, 6.

A. n. S. P., one example. Natal
coast. H. W. Bell Marley. Length
230 mm.

Scorpaenopsis novae-guineae
Cuvier

Scorpaena novae-guineae Cuvier,
Hist. Nat. Poiss., Vol. 4, p. 320,
1829 (type locality, New Guinea).
— Gray, Descr. Cat. Specimens
Roy. College Surg., pp. 26, 140, 1859
(Fiji). — Beaufort, Bijdr.
dierk. Amsterdam, vol. 19, p. 148,
1913 (Saonek, Waigiu).

Scorpena novae-guineae Duoy and
Gaimard, Voy. Astrolabe, Zool.,
vol. 3, p. 687, pl. 11, fig. 1, 1834 (Port
~~more~~ Dorey, New Guinea).

Scorpaenopsis novae-guineae
Bleeker, Verh. Kon. Akad. Wet.
 Amsterdam, vol. 16, no. 2, p. 34, pl.
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 Ceram, Ambon, Waigiu, Rawak,
 New Guinea). — Sauvage, Nouv.
 Arch. Mus. Hist. Nat. Paris, ser.
 6, vol. 1, p. 129, 1879 (type).

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 Fisher., vol. 25, p. 375, 1905 (1906)
 (Apia); Proc. U. S. Nat. Mus.,
 vol. 28, p. 792, 1905 (1906) (Negros);
~~Jordan and Seale~~ Bull. Bur.

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(1068)

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p. 65, 1931 (1934) (Dumaguete). —
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(Bangkok; Sriracha, Siam).

Scorpaenopsis nova-guineae Bleeker,
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37, 1878 (New Guinea).

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vol. 25, p. 375, 1906 (copied).

? Scorpaena rawakensis Duoy and
Gaimard, Voy. Uranie, Zool., p. 325,
1824 (type locality, Rawak;
Waigiu).

Scorpaena papuensis Cuvier, Hist.
Nat. Poiss., vol. 4, p. 236, 1829
(type locality, New Guinea).

Scorpaenopsis papuensis Sauvage,
Bour. Arch. Mus. Hist. Nat.
Paris, ser. 6, vol. 1, p. 129, 1878
(type). — Fowler, Mem. Bishop
Mus., vol. 10, p. 286, 1928 (compiled).

Scorpaenopsis cacopsis Jenkins, ¹⁰⁷⁰
Bull. U. S. Fish Comm., vol. 19, p.
401, figs. 3-14, 1899 (1901) (type
locality, Honolulu); vol. 22, p.
497, 1902 (1903) (Honolulu). —
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S. Fish Comm., vol. 23, pt. 1, p.
467, figs. 205-a, pl. 71, 1903 (1905)
(Honolulu). — Jordan and
Snyder, Proc. U. S. Nat. Mus.,
vol. 29, p. 357, 1906 (Tahiti). —
Jordan and Seale, Bull. Bur.
Fisher., vol. 25, p. 375, 1905
(copied). — Jordan and Jordan,
Mem. Carnegie Mus., vol. 10, no. 1,
p. 55, Dec. 1922 (Hawaii). —
Fowler, Mem. Bishop Mus., vol. 10,
p. 286, pl. 35 B, 1928 (type; Honolulu).

1071

Depth $2\frac{1}{2}$ to $2\frac{3}{4}$; head $2\frac{1}{4}$ to $2\frac{1}{3}$,
width $1\frac{2}{5}$ to $1\frac{1}{2}$. Snout $2\frac{4}{5}$ to $3\frac{1}{4}$
in head from snout tip; eye 6
to $8\frac{2}{5}$, $2\frac{1}{4}$ to $2\frac{2}{3}$ in snout,
subequal with interorbital; maxillary
reaches hind eye edge or slightly
beyond, expansion $1\frac{1}{5}$ to $1\frac{1}{4}$ times
eye, length $1\frac{7}{8}$ to 2 in head
from snout tip; teeth villiform,
in broad bands in jaws, and
small on vomer, none on palatines;
interorbital $5\frac{2}{5}$ to $6\frac{1}{2}$ in head
from snout tip, deeply concave.

Nasal, preocular, supraocular,
postocular, tympanic, parietal
and nuchal spines well developed;
suborbital ridge with 4 spines;
followed by double spine at
preopercle angle, and 3 or 4
more on lower edge of preopercle;
2 opercular spines, lower little

advanced.

Scales 53 or 54 + 4 in lateral line; tubular scales 29 + 1 in lateral line; 9 scales above to soft dorsal origin, 16 below; 11 or 12 pre dorsal. Supr. basal flap short, at front nostril; preorbital with fringed flap; 4 flaps along outer face of each mandibular ramus; 3 or 4 flaps along lower opercular edge.

D. XIII, 10, fourth spine 3 to $3\frac{1}{4}$ in total head length, ~~3 to 3.5~~, fourth ray $2\frac{2}{5}$ to $2\frac{1}{2}$; A. ~~III, 5~~, third spine $3\frac{2}{5}$ to $3\frac{1}{2}$, second ray $2\frac{1}{6}$ to $2\frac{1}{3}$; caudal $1\frac{7}{8}$ to 2; least depth of caudal peduncle $3\frac{1}{5}$ to $3\frac{1}{2}$; pectoral $1\frac{1}{2}$ to $1\frac{3}{4}$, rays I, 8, IX; ventral rays I, 5, for $1\frac{3}{4}$ to $1\frac{4}{5}$.

1073

dark brown, mottled or
marbled and clouded with
darker or blackish, and variegated
with dark lines and streaks.
Sometimes as several dark
transverse variable broad bands.
Inside pectoral varied with
brown.

East Indies, Siam, Philippines,
Polynesia, Hawaii.

I see nothing, upon comparison of my various materials, to separate the nominal Scorpaenopsis cacopsis Jenkins. Also Scorpaena papuensis Cuvier and S. rawakensis Quoy and Gaimard, as Bleeker has suggested in 1876. are probably synonyms. The inner pectoral base is with very variable pale or whitish spots, bars or blotches.

1075

16867. Bisney Island. April 9,
1909. Length 218 mm. Scales 38 + 3.
21654. Cebu market. August 28, 1909. Length 142 mm.
11766. Iloilo market. June 2,

1908. Length 158 mm.

7514, 12392. Hong Kong, China.
August 13, 1908. Length 110 to 192
mm. Scales 38 to 47 + 3.

11662. Kowloon, China. October
5, 1908. Length 158 mm. Scales
39 + 3.

4329. D. 5249. Lanang Point, N. 1 mile
(N. lat. $7^{\circ}6'6''$, E. long. $125^{\circ}40'8''$), Gulf of
Samar. In 23 fathoms.
May 18, 1908. Length 113 mm.

U. S. N. M., No. 49690. Honolulu. ¹⁹⁷⁶
Dr. D. P. Jenkins. Length 347 mm.
Head width $1\frac{2}{5}$. Type of
Scorpaenopsis coccopsis.

U. S. N. M., No. 52032. Southern
Mexico. Bashford Dean. Length
143 mm.

U. S. N. M., No. 52468. Apia.
Bureau of Fisheries. Length 204 mm.

U. S. N. M., No. 55169. Hawaii.
Albatross Collection (04144, 05300,
05297). Length 195 to 270 mm.
Three examples.

U. S. N. M., No. 57647. Japan.
P. L. Jouy. Length 204 mm.

Scorpaenopsis cypho new species

Depth $2\frac{1}{2}$, back anteriorly greatly elevated; head $2\frac{1}{10}$, width $1\frac{2}{3}$. Snout $3\frac{1}{3}$ in head from snout tip; eye $4\frac{1}{5}$, $1\frac{1}{4}$ in snout, $1\frac{1}{5}$ in interorbital; maxillary reaches $\frac{1}{2}$ below eye, expansion $1\frac{1}{4}$ in eye, length 2 in head from snout tip; teeth in narrow villiform bands in jaws, and on vomer but none on palatines; interorbital 4, deeply concave; occiput with moderate anterior depression close behind level of eye. Gill rakers $4 + 8$, low tubercles, $\frac{1}{2}$ of gill filaments, which 2 in eye.

basal spines 2, moderate; antero-supraorbital spines

small and postero-supraorbital
spines 2 pairs, broad; tympanic
pair small, parietal and
occipital pairs close and well
back; postocular spine large;
temporal and suprascapular
spines each well developed;
3 preorbital spines each side,
of which first directed forward
and other 2 directed back;
suborbital stay with 3 spines;
4 preopercular spines; 2
divergent opercular spines.

Scales $33 + 3$ along, close
above, lateral line, tubes.
 $20 +$ in lateral line; 8 scales
above, 14 below, 6 predorsal.
But few skinny flaps and
no supraorbital tentacle.
Scales much smaller on belly
and breast, and pectorals.

1083

base. Few scales on sides of head posteriorly. Scales with 6 basal radiating striae; 2 to 5 rather long, subequal apical denticles; circuli moderate.

D. XII, 10, edge of spinous dorsal moderately incised between end of each spine, fourth spine 3 in total head, third ray $2\frac{1}{2}$; A. III, 5, second spine $2\frac{2}{5}$, second ray $2\frac{2}{5}$; caudal 2, convex behind; least depth of caudal peduncle $4\frac{1}{5}$; pectoral $1\frac{1}{2}$, rays 16, all simple; ventral rays I, 5, fin 2 in total head length.

Pale or brownish white. Head with dark brown shadings. Iris gray, with some

1084

dark specks. On elevated back below front of spinous dorsal large, broad, dark brown blotch. Dark brown band connects second dorsal and anal. Under surface of head, chest and breast brownish. Belly white, like most of flanks. Brown shade on front of spinous dorsal and middle of second dorsal, darkest marginally, both as reflections from dark body bands, which on anal form broad blackish brown contrasted band leaving edges of rays broadly white. Caudal white, subbasally with black band and marginally with broad brown band. Pectoral

1085
mottled with brown, dark
brown terminally. Ventral
brown, blackish terminally.
U. S. N. M., No.

Albatross Collection [1242].

San Pascual tide pool.

May 8, 1909. Length 30 mm.

Type.

A species characterized
by its greatly elevated back,
much more hunched than
in Scorpaenopsis gibbosus,
the evenly inclined upper
profile of the head and
greatly contrasted color
pattern.

21811. Pandanon Island. March 24,
1909. Length 44 mm. Paratype.

Scorpaenopsis maculidorsalis

new species

Depth $2\frac{3}{5}$; head $2\frac{1}{4}$, width $1\frac{2}{7}$. Snout $3\frac{1}{2}$ in head from snout tip; eye $4\frac{1}{2}$, $1\frac{1}{2}$ in snout; $1\frac{2}{5}$ in interorbital; maxillary reaches $\frac{1}{2}$ in eye, expansion $1\frac{1}{5}$ in eye, length 2 in head from snout tip; bands of fine villiform teeth in jaws, sharp pointed, and small band on vomer, none on palatines; interorbital $3\frac{3}{4}$, broadly and deeply concave, leading back to deep occipital depression; deep pit below lower front part of eye. Gill rakers 6 + 11, low, ~~and spinous~~ spinous, of which 4 or 5 above and below rudiments; longest $\frac{1}{2}$

1087

of gill filaments, which $\frac{1}{2}$ of eye.

Pair of strong nasal spines, each with expansion of 5 denticles posteriorly; low antero-supraorbital spine and 2 postero-supraorbitals, first expanded with auxiliary ~~dent~~ point and second broader or with 4 points; strong coronal point each side of pit; parietal-occipital ridge short, each with 2 strong points; small postocular spine followed by large strong spine over preopercle and pair of large strong spines, one over the other close before suprascapular spine; 2 divergent strong preorbital spines, posterior larger and points down over maxillary;

1088

4 strong spines on ridge of sub-orbital stay, followed by large strong spine at preopercle angle, with strong short point median on its outer edge; 4 broad, strong spines on lower preopercle edge; 2 strong opercular spines, upper twice as wide as lower and with a small lower auxiliary point, lower little advanced; strong oblique humeral spine.

Scales $30 + 5$ close above along lateral line; tubes $22 + 2$ in lateral line; 7 above, 14 below; 7 predorsal forward to occiput. Small scattered, obscure or imbedded scales on chest, breast, prepectoral region and far back as front of ventrals, and

1089

behind paired fins basally
narrow naked area. Few
obscure scales on maxillary
and cheek, larger and
more distinct on opercle;
scales small and crowded
on lower part of belly and
around vent, also few on
caudal base. Head with many
cirri and short flaps, also
many small cirri on dorsals
and outer surfaces of pectorals
and flaps along lateral line.
Lateral line complete, axial
along side of body; tubes
simple, well exposed, large.
Scales with 7 or 8 basal radi-
ating striae; 27 or 28 apical
denticles, with 2 to 4 transverse
series of basal elements;
circuli very fine, abruptly
terminating apically.

D. XII, 10, fourth spine $2\frac{4}{5}$ ¹⁰⁹⁰
in total head length, third ray
 $2\frac{1}{4}$; A. III, 5, second spine $2\frac{1}{4}$,
first ray 2; caudal $1\frac{9}{10}$,
truncate, little convex as
expanded; least depth of
caudal peduncle $3\frac{3}{5}$;
pectoral $1\frac{2}{5}$, rays I, 5, XI;
ventral rays I, 5, length $1\frac{1}{2}$
in total head length.

Brown, with obscure paler
and darker cloudings, also
small dark spots or dots
scattered about, especially
on head. Iris mottled with
brown. Belly behind ventrals
and below pectoral whitish,
uniform. Pale or whitish
area on lower surface of
caudal peduncle behind anal
fin. Dorsals mottled or clouded
with brownish, and broad

1091

black marginal blotch on fin
from fifth to ninth spines.
Anal crossed by broad
dark brown band, basally
and marginally whitish. I
Caudal whitish medially,
broad dark brown band
basally and marginally.
Outer face of pectoral black-
ish brown basally and marg-
inally, median region mottled
brown; inner surface largely
white, outer margin broadly
blackish and axil and basally
about a dozen small blackish
spots. Ventrals mottled brown,
whitish basally.

U. S. N. M., No.

Catangan Bay, Masbate. April
19, 1908. Length 101 mm. Type.

Differs from Scorpaenopsis¹⁰⁹²
cypho in details of coloration,
as the presence of the dark
or black blotch on the spinous
dorsal and the black spots
in the pectoral axil.

Scorpaenopsis altirostris Gilbert

Scorpaenopsis altirostris Gilbert,
Bull. U. S. Fish Comm., vol. 23, pt.
2, p. 628, fig. 244, 1903 (1908)

(type locality, Off Southern
Holobai, in 43 to 73 fathoms).

— Jordan and Seale, Bull. Bur.
Fishes, vol. 25, p. 376, 1905 (reference).

Scorpaenopsis cacopsis (not Jenkins)
Fowler, Mem. Bishop Mus., vol. 10,
p. 286, 1928 (type of Scorpaenopsis
altirostris).

1094

Depth $2\frac{2}{3}$; head 2 , width $1\frac{3}{4}$.

Snout $3\frac{7}{8}$ in head from snout tip; eye $3\frac{1}{2}$, equals snout, nearly twice interorbital; maxillary reaches opposite hind eye edge, expansion $1\frac{3}{4}$ in eye, length 2 in head from snout tip; bands of villiform teeth in jaws and on vomer, none on palatines; interorbital $6\frac{4}{5}$, deeply concave. Gill rakers $5+2$, low spinous tubercles, $\frac{1}{2}$ of gill filaments, which $3\frac{1}{2}$ in eye. Basal spine moderate, with rather long flap; antero-supraorbital spine short, and 2 postero-supraorbitals with posterior little larger; tympanic pair slender; parietal and nuchal pairs large and close, tympanic and parietals separated by deep and somewhat quadrate depression; postocular large,

1095

below parietal; preopercle edge
with 3 spines, uppermost largest;
2 opercular spines, lower bifid;
broad short temporal plate,
with several minute points
above and lower larger one;
suprascapular ridge with low
spine in front; suborbital
ridge with 4 low spines and
small auxiliary before and
basal to uppermost preopercular
spine; 2 widely diverging, large
preorbital spines. Suprabacular
flap longer than eye, expanded
wide as pupil and edges
irregularly fringed.

Scales $26 + 3$ in lateral line;
pores 24 in lateral line; 6 scales
above, 11 below, 6 predorsal.
Cheeks and opercles with ctenoid
scales, rest of head naked. Body
scales largely ctenoid, cycloid

1096

on prepectoral, breast and belly.
Skinny flaps on head and
body variable. Scales with 8
basal radiating striae; 28 to 30
low, irregular, apical denticles;
circuli fine.

D. XII, 9, I, fourth spine $2\frac{1}{4}$ in
total head length, first ray $2\frac{1}{3}$;
A. III, 5, I, second spine $2\frac{1}{8}$, third
ray $2\frac{1}{8}$; caudal $1\frac{2}{3}$, convex
behind; least depth of caudal
peduncle $4\frac{2}{5}$; pectoral $1\frac{1}{8}$, rays
I, 16, of which only 5 upper
branched; ventral rays I, 5, fin
 $1\frac{2}{3}$ in total head length.

Largely uniform pale brown,
fins whitish and eye grayish.

Hawaiian Islands. Hudson's
figure, as published by Gilbert
shows the jaws even, though in the
type the lower jaw well projects.

1097

At the time (1928) I placed
this species with the nominal
Scorpaenopsis caccopsis of Jenkins,
not having the type at hand, I
was misled by Gilbert's
statement "Occipital fossa
moderate, quadrate," though it
is more pronounced in my
smallest specimens of S. caccopsis.
The present species is to be
distinguished by its high dorsal
spines and long slender anal
spines.

One example. D. 5165. Observation
Island, N. 70° W., 6.4 miles (N. lat. $4^{\circ}58'20''$,
E. long. $119^{\circ}50'30''$). In 9 fathoms.
February 24, 1908. Length 38 mm.
This example with a black
occipital blotch, very contrasted,
but not visible in a profile
or lateral view. It is also
present in the intermediate sized
paratype no. 51671.

U. S. N. M., no. 51636. Off south
coast of Molokai. In 45 to 73
fathoms. Length 62 mm. Type.

U. S. N. M., no. 51671. Hawaii.
Albatross Collection. Length 45 to 50
mm. Three examples. Paratypes.

1099

Scorpaenopsis gibbosus (Schneider)

Scorpaena gibbosa Schneider, Syst.
Ichth., p. 192, pl. 44, 1801 (type
locality, "America" [= Indo-
Pacific]). — Troschel, Arch.
Naturg., vol. 6, pt. 1, p. 274, 18
(type).

— Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 119, 1860 (copied). —
Klunzinger, Verh. zool. bot. Ges.
Wien, vol. 20, p. 800, 1870 (Red Sea).
— Günther, Journ. Mus. Godeffroy,
vols. 2-3, pts. 5-6, p. 79, pl. 53, 1874
(Pelew Islands; Society Islands).
— Schmeltz, Cat. Mus. Godeffroy,
no. 6, p. 13, 1877 (Pelew Islands);
no. 7, p. 43, 1879 (Viti Islands).

1100

— Macleay, Proc. Linn. Soc. New
South Wales, vol. 7, p. 248, 1882
(New Guinea). — Pohl, Cat. Mus.
Godeffroy, no. 9, p. 29, 1884 (South
Sea). — Klunzinger, Fische Roth.
Meer., p. 70, 1884.

— Steindachner, Denks. Akad. Wiss.
Wien, math.-naturw. Kl., vol. 70, p.
491, 1901 (Honolulu). — Weber,
Siboga Exped., vol. 65, Fische, p.
404, 1913 (Karabeklang Island;
Waigiu; Saleyer; Nuka Laut;
Tadam; Macassar). — Whitley,
Journ. Pan Pac. Res. Inst., vol.
1, no. 2, p. 6, Jan.-March 1927
(Fiji).

Scorpaenopsis gibbosus Bleeker,
Nat. Tijds. Ned. Indie, vol. 20,
p. 129, 1859-60 (Boni), p. 141
(Badjoa, Boni); Verslag. Kon.
Akad. Wet. Amsterdam, vol. 14,
p. 101, 1862 (Batjan); vol. 16, p.
368, 1864 (Amu; Moluccas); Ned.
Tijds. Dierk., vol. 1, p. 264, 1863
(Atapupu, Timor); vol. 2, p. 142,
1865 (Buru); Verh. Kon. Akad.
Wet. Amsterdam, vol. 16, no. 2, p.
38, pl. 2, fig. 1, 1876 (Sumatra; Nias;
Celebes; Timor; Batjan; Ceram;
Amboina; Banda; Amu). —
Jordan and Jordan, Mem. Carnegie
Mus., vol. 10, no. 1, p. 55, Dec. 1922
(Hawaii).

1102

— Fowler, Bishop Mus. Bull., No. 22,
p. 11, 1925 (Guam), p. 27 (Honolulu);
Copeia, No. 112, p. 84, Nov. 20, 1922
(Hawaii); Proc. Acad. Nat. Sci.
Philadelphia, vol. 77, p. 254, 1925
(Katal); Mem. Bishop Mus., vol.
10, p. 286, 1928 (Pacific Ocean,
Honolulu, Nukuniva, Guam,
Guamotus, Society Islands,
Apia, Marshall Is., Ebon Island).

— Pietschmann, Bull. Bishop Mus.,
No. 73, p. 17, 1930 (Waikiki).

— Fowler, l. c., vol. 11, No. 5, p. 348, 1931
(Honolulu); vol. 11, No. 6, p. 429, 1934
(Bougainville Island, Rarotonga,
Banks Island).

Scorpaenopsis gibbosa Jordan and
Hubbs, Mem. Carnegie Mus., vol. 10,
no. 2, p. 272, June 27, 1925
(Kagoshima Bay).

1104

Scorpaena nesogallia Cuvier, Hist.
Nat. Poiss., vol. 4, p. 315, 1827 (type
locality, Mauritius). — Lesson, Voy.
Cochin, vol. 2, p. 213, 1830

— Valenciennes, Règne Animal, Cuvier,
ed. ill., pl. 23, fig. 1, 1839.

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2, p. 119, 1860 (copied).

Scorpaenopsis nesogallia Heckel, Ann.
Wien. Mus., vol. 2, p. 159, 1840.

Scorpaena diabolus (not Cuvier)

Richardson, Voy. Sulphur, Fish, p. 76,
pl. 40, 18

— Bleeker, Nat. Tijds. Ned. Indië,
vol. 3, p. (237) 266, 1852 (Wahai),
p. 546 (Amboina); vol. 5, p. 234, 1853
(Ceram); vol. 6, p. 457, 1854
(Amboina); Act. Soc. Sci. Ind.
Ned., vol. 1, no. 5, p. 5, 1856
(Amboina).

— Günther, Cat. Fish. Brit. Mus., vol.
2, p. 117, 1860 (Tahiti; New Guinea;
China; Amboyna). — Kner, Reise
Novara, Fische, p. 117, pl. 6, fig. 1 (gills),
1865 (South Seas). — Playfair,
Fishes of Zanzibar, p. 46, 1866
(Aden). — Schmeltz, Cat. Mus.
Godeffroy, no. 4, p. 15, 1869 (Viti
Islands).

— Macleay, Proc. Linn. Soc. New South
Wales, vol. 8, p. 265, 1883 (Wood Bay,
New Guinea). — Boulenger, Ann.
Mag. Nat. Hist., London, ser. 6, vol. 20,
p. 373, 1897 (Rotuma).

Scorpaenichthys diabolus Bleeker,
Nat. Tijds. Ned. Indië, ~~XXX~~ p. 407,
1855 vol. 11,

Scorpaenodes diabolus Bleeker, op.
cit., vol. 14, p. 452,
Act. Soc. Ind. Neerl., vol. 2, no. 7, p.
4, 1857 (Amboina).

1107

Scorpaenopsis diabolus Bleeker,
Act. Soc. Sci. Ind. Neerl., vol. 6, no. 2,
pp. 2, 3, 1859 (Doreh, New Guinea);
Nat. Tijds. Ned. Indie, vol. 22, p. 244,
1860 (Tambelang, Bawean); Verslag.
Kon. Akad. Wet., Amsterdam, ser. 2,
vol. 2, p. 299, 1868 (Waigiu); Verh.
Kon. Akad. Wet. Amsterdam, vol.
16, no. 2, p. 36, pl. 1, fig. 3, 1876 (Java,
Bawean, Celebes, Amboina, Ceram,
Waigiu, New Guinea).

Scorpaena marmorata (Parkinson)
Bleeker, Verh. Kon. Akad. Wet.,
 Amsterdam, vol. 16, no. 2, p. 37, 1876
 (name in synonymy).

Sebastopsix marmorata Jordan and
Richardson, Philippine Journ. Sci.,
 vol. , p. 51, 1910 (reference).

Scorpaena multicolor (Kuhl and Van
Hasselt) Bleeker, op. cit. (name in
 synonymy).

1109

Scorpaena rosea Day, Proc. Zool. Soc.
London, p. 703, 1867 (type locality,
Madras). — Weber, Siboga Exped.,
vol. 65, Fische, p. 496, 1913 (Sulu
Archipelago).

Scorpaenopsis rosea Day, Fishes of
India, pt. , p. 151, pl. 36, fig. 4
(type). — Gilchrist and Thompson,
Ann. Durban Mus., vol. 1, pt. 4, p.
408, 1917.

— Barnard, Ann. South African Mus.,
vol. 21, pt. 2, p. 904, Oct. 1927 (Natal;
Zululand). — Fowler, Proc. Acad.
Nat. Sci. Philadelphia, vol. 86,
p. 483, 1934 (Natal).

1110

Scorpaena kagoshimana (Döderlein)
Steindachner and Döderlein, Denks.
Akad. Wiss. Wien, math.-naturw. Kl.,
vol. 47, pt. 1, p. 196, 1883 (type locality,
Kagoshima); vol. 53, pt. 1, (p. 296) pl.
3, fig. 1-a, 1887.

Scorpaenopsis kagoshima Jordan and
Snyder, Annot. Zool. Japon., vol. 3,
p. 99, 1901 (Kagoshima).

Scorpaenopsis kagoshimana Jordan
and Starks, Proc. U. S. Nat. Mus., vol.
27, p. 137, 1904 (reference).

1111

Scorpaenopsis catocala Jordan
and Evermann, Bull. U. S. Fish
Comm., vol. 22, p. 201, 1902 (1903)
(type locality, Honolulu; Hilo).
— Snyder, Bull. U. S. Fish Comm.,
vol. 22, p. 506, 1902 (1904) (Honolulu).
— Jordan and Snyder, Proc. U. S.
Nat. Mus., vol. 27, p. 946, 1904 (Honolulu;
Hilo). — Jordan and Evermann,
Bull. U. S. Fish Comm., vol. 23, pt. 1,
pl. 56, 1903 (1905).

Sebastapistes ~~cat~~ baillieni (not
Vaillant and Sauvage) Seale, Ocean.
Pap. Bishop Mus., vol. 4, no. 1, p. 80, 1906
(Chukuhiva, Marquesas Islands).

depth to $3\frac{1}{4}$; head $2\frac{1}{5}$ to $2\frac{1}{4}$,
width $1\frac{1}{2}$ to $1\frac{3}{5}$. snout $2\frac{1}{5}$ to
 $3\frac{1}{4}$ in head from snout tip; eye
6, to $2\frac{1}{5}$ in snout, pupil
interorbital; maxillary reaches
 $\frac{1}{5}$ or to $\frac{1}{4}$ of head depth, expansion
small eye, length 2 in head
from snout tip; teeth in uniform
bands in jaws, 5 or 6 transverse
irregular rows, also present on
venter, but none on palatines;
interorbital $\frac{1}{4}$ in head from snout
tip, very steeply convex. Gill
rakers 5 + 1, low, short, rough,
 $\frac{1}{4}$ of gill filaments, which $\frac{1}{4}$
in eye. 2 or 3 anal spines; 4
supraorbital, 1 low postocular
and 2 large pectorals; suborbital
ray with 4 spines, 1 ventral
in front of pelvic by 1 on pe-
rion. anal 1 on pectorals; 3 spines
on lower anal prepectal rays;

1113

2 low spines close behind middle to hind eye edge, then large one below parietals and 3 large ones about suprascapula; 2 on opercle above.

Scales 42 + 4 close above along lateral line; tubular scales 21 to 23 + 2 or 3 in lateral line; 6 scales above, 18 below, 7 pre-dorsal. 2 bony flaps on head and body, one over each eye long as eye, besides many short fleshy points; 5 or 6 large ones along lateral line. Scales with 11 or 12 basal radiating striae; 60 to 62 slender, minute spinous denticles; circuli very fine.

D. XII, 9, I, third spine $2\frac{7}{8}$ to 3. in total head length, third ray $2\frac{1}{3}$ to $2\frac{3}{5}$; A. III, 5, I, second spine $2\frac{2}{5}$ to $2\frac{1}{2}$, second ray $2\frac{1}{5}$

1114

to $2\frac{1}{4}$; caudal $1\frac{3}{4}$ to $1\frac{4}{5}$, little
convex behind; least depth of
caudal peduncle $3\frac{7}{8}$ to 4; pectoral
 $1\frac{2}{5}$ to $1\frac{1}{2}$; ventral $1\frac{2}{3}$ to $1\frac{9}{10}$.

Dark brown above, clouded
and mottled with darker belly
and under surface of head pale
to whitish. Iris slaty gray.
Fins brown, all mottled, barred
and blotched with various shades
of darker.

Red Sea, Zanzibar, Zulu-land,
Katal, Mauritius, India, East
Indies, Philippines, Japan,
Micronesia, Polynesia, Hawaii.

2241 [1741]. D. 5478. Tacbac
Point (Leyte), S. 80° W., 15.2 miles (N. lat.
 $10^{\circ}46'24''$, E. long. $125^{\circ}10'30''$), between Samar and Leyte.
July 29, 1909. Length 100 mm.
In 57 fathoms.

One example. Catangan Bay, Masbate. April 19, 1908. Length 130 mm. ¹¹¹⁶

5717. Cebu market. August 12,
1909. Length 108 mm.

22926, 22927. D. 5165 Observation
Island, N. 70° W., 6.40 miles (N. lat. $4^{\circ}58'20''$,
E. long. $119^{\circ}53'30''$), Sulu Archipelago. In 9 fathoms.
February 24, 1908. Length 54 and
55 mm.

U. S. N. M., no. 44841. *Pannotus*.
Whitaker. Length 174 mm. In
alcohol light pink in color.

U. S. N. M., no. 52328. Samoa.
Bureau of Fisheries. Length 174 mm.

U. S. N. M., no. 58534. Honolulu.
E. L. Berndt. Length 165 to 174 mm.
Two examples. Quite variable,
and differing from the other specimens
in their dark or swarthy abdomens.

U. S. N. M., no. 59717. Kagoshima,
Japan. H. M. Smith. Length 139 mm.

U. S. N. M., no. 59718. Kagoshima.
H. M. Smith. Length 110 to 173 mm.
Three examples. As *Scorpaenopsis*
kagoshimana, also the last.

U. S. N. M., no. 71665. Kaha,
Okinawa. Albatross Collection 1906.
Length 215 mm.

A. N. S. P., two examples. Natal.
1932. H. W. Bell Marley. Length 205
to 208 mm. As Scorpaenopsis roseus.

Genus Peloropsis Gilbert

Peloropsis Gilbert, Bull. U. S. Fish
Comm., vol. 23, pt. 2, p. 630, 1903
(1905). (Type Peloropsis xenops
Gilbert, monotypic.)

1128
15903. Capulaan Bay, Pagbilao
Island. February 24, 1909. Length 148 mm.

6857 and 6858. Caxisigan Island.
January 2, 1909. Length 96 to 118 mm.

272. Cagayanes Island. March 31,
1909. Length 129 mm.

5383 and 7571. Cebu market. April
6, 1908. Length 87 to 95 mm.

18466. Cebu market. April 15, 1908.
Length 122 mm.

20471. Danawan Island and Si
amil Island. September 28, 1909.
Length 48 mm.

10892. Dasol Bay. March 9, 1909.
Length 130 mm.

15111 and 15841. Dupon Port, Leyte.
March 17, 1909. Length 88 to 137 mm.

Related to Scorpaenopsis
but with the head and belly
closely compressed. basal
half of the muzzle much
contracted, scales cycloid,
belly and breast completely
scaled, head naked. the
pectoral fin not extended
below and the third dorsal
spine much extended.

Peloropsis xenops Gilbert

Peloropsis xenops Gilbert, Bull. U.S.
Fish Comm., vol. 23, pt. 2, p. 630, fig.
245, 1903 (1905) (type locality,
Awau Channel between Maui and
Lanai Islands, in 32 to 34 fathoms).
— Jordan and Seale, Bull. Bur. Fisher.,
vol. 25, p. 379, 1905 (reference). —
Fowler, Mem. Bishop Mus., vol. 10,
p. 287, 1928 (copied).

1127

Purplish slate. Small black blotches at axils of vertical fins. Breast with numerous round bronze spots, likewise side of head. Iris narrowly golden. Dorsal tipped black, barred with narrow paler bands. Anal narrowly tipped blue, anteriorly with submarginal black line continued posteriorly as margin. Caudal slate, with white margin in fork. Pectoral membranes hyaline, rays dusky orange, edge blackish. Ventral bluish on front and edge.

16460. Busin Harbor, Burias Island.
April 22, 1908. Length 165 mm.

Depth $2\frac{2}{5}$; head $2\frac{1}{10}$, width $2\frac{1}{2}$.
Snout $2\frac{2}{5}$ in head from snout
tip; eye $5\frac{3}{4}$, $2\frac{1}{5}$ in snout, greater
than interorbital; maxillary
reaches $\frac{1}{3}$ in eye, expansion
equals eye, length $1\frac{9}{10}$ in head
from snout tip; teeth finely
villiform, in rather broad bands
in jaws, and small, narrow,
triangular patch on vomer,
none on palatines; interorbital
 $8\frac{2}{5}$, very deeply concave. Gill
rakers 6 + 17, low spinescent
tubercles, $\frac{1}{2}$ of gill filaments,
which 2 in eye.

Pair of short strong spines
before nostrils; low antero-
supraorbital spine, and 2
postero-supraorbitals, of which
posterior much larger and higher;
occipital and nuchal spines

high ridge, little distinct and fused, each side of head, and rather deep quadrate pit in front; 2 postocular spines, followed by broad one at suprascapula, and small one above second postocular; 2 obtuse preorbitals, second larger; suborbital stay preceded by preorbital spine, its own ridge with 3 spines; 4 obtuse spines on preopercle edge; 2 divergent opercular spines, lower but slightly posterior, broadly obtuse humeral spine.

Scales $50 + 4$ close above along lateral line [Gilbert gives "about 70 vertical rows above lateral line" though his figure shows 53]; tubes $23 +$ in lateral line; 6 scales above lateral line, 23 below;

6 predorsal. Head naked.
 Scales much smaller on chest,
 breast and prepectoral regions,
 and absent from belly between
 ventrals. Lobate cutaneous flaps
 at pair at nasal spines, medio-
 supraorbital spines, 1 at postero-
 preorbital spine, 3 along each
 lower preopercular edge, 1 at
 mandibular symphysis and 3
 on each mandibular ramus;
 row of 10 along lateral line and
 large one behind tip of third
 dorsal spine. Head, spinous
 dorsal, upper part of pectoral
 and back with scattered and
 variable flaps.

D. XII, 9, I, third spine $1\frac{2}{5}$ in
 total head length, third ray 2;
 A. III, 5, I, second spine $2\frac{1}{4}$,
 second ray $1\frac{9}{10}$, caudal $1\frac{1}{2}$,

1132

rounded behind; least depth of caudal peduncle $4\frac{1}{5}$; pectoral $1\frac{2}{5}$, rays 18; ventral rays I, 5, fin $1\frac{3}{4}$ in total head length.

Pale or light brown, with some obscure darker cloudings. White spot below depression in cheek, another behind end of maxillary, row of 3 inclined forward from ninth dorsal spine and finally small white saddle on upper part of caudal peduncle.

Hawaiian Islands.

U. S. N. M., No. 51604. Avau Channel, between ~~Molokai~~ Maui and Lanai Islands, in 32 to 43 fathoms. Albatross Collection 3872. Length 150 mm. Type.

1133

Genus Rhinopias Gill

Rhinopias Gill, Proc. U. S. Nat.
Mus., vol. 28, p. 225, 1905. (Type
Scorpaena frondosa Günther,
orthotypic.)

Bathyploactis curtisensis Whitley

Bathyploactis curtisensis Whitley,

Rec. Austral. Mus., vol. 19, ^{no. 1} p. 103, pl. 14, fig. 1, 1933 (type locality, Off Satcumbe Head, Port Curtis, Queensland: Port Curtis; Bowen; Albany Passage).

~~Bathyploactis curtisensis ornata-
similis Whitley, op. cit., p. 103, pl. 13,
fig. 2, 1933 (type locality,~~

Body well compressed, elongately
 ovoid, with back elevated anteriorly.
 Head deep, compressed. Muzzle
 deep, protruding, deeply concave
 in profile. Eye small, elevated
 and greatly protruded in upper
 profile, median in length of
 head. Mouth large, low, little
 inclined and lower jaw protrudes.
 Maxillary extends below eye,
 expanded terminally. Cheek
 concave. Bands of fine teeth
 in jaws, on vomer, but none on
 palatines. Bone crest each side
 of occiput. Scales minute,
 obscure. Head, body and most
 of fins with numerous thinny
 flaps. Lateral line distinct.
 Ventrals united, though notch deep,
 base of membrane of pectoral fin
 deeply incised. Anal like second
 dorsal, with 3 graduated spines.

1135

Caudal rounded. Pectoral large,
upper rays branched. Ventral
small.

One species. Closely related
to Peloropis Gilbert, but differs
in its smaller scales, third dorsal
spine subequal with the fourth,
notch separating dorsal fins deeper
and the skin flaps longer and
more numerous. Günther said
"It differs very markedly in
appearance from typical Scorpaenae,
but, in my opinion, too much
weight should not be laid upon
modifications of form in fishes
which so readily adapt their
outward appearance to their
surroundings. The fish when
at rest on the bottom must
closely resemble a stone on which
sea-weed has begun to grow."

1136

Rhinopias frondosa (Günther)

Scorpaena frondosa Günther,
Proc. Zool. Soc. London, p. 482, pl.
39, 1891 (type locality, Mauritius).

Rhinopias frondosa Gill, Proc.
U. S. Nat. Mus., vol. 28, p. 225, fig.
(copied), 1905 (reference).

Depth $2\frac{1}{6}$; head $2\frac{1}{6}$, width
 $2\frac{1}{6}$? Snout $2\frac{1}{8}$ in head from
 snout tip; eye $5\frac{4}{5}$, $2\frac{3}{4}$ in
 snout, equals bony interorbital;
 maxillary reaches $\frac{1}{4}$ in eye,
 expansion $1\frac{1}{8}$, length $2\frac{1}{4}$ in
 head from snout tip; band
 of villiform teeth in jaws, and
 angular band on vomer; interorb-
 ital $5\frac{4}{5}$, deeply concave; upper
 profile of snout deeply concave.

Scales on body very small
 and ⁱⁿ distinctly ctenoid, not
 present on head or fins. Nearly
 every part of fish covered with
 long fleshy tentacles, simple
 or fringed at end; most
 numerous on spinous dorsal
 and on pectoral fins, but
 very few on soft vertical fins;
 largest on jaws, on top of orbital
 edge, along preopercular margin,

and along lateral line; eye surrounded by ring of small tentacles.

D. XI, I, 9, origin in foremost part of nape over hind angle of preopercle, third spine $1\frac{4}{5}$ in total head length, third ray $1\frac{4}{5}$; A. III, 5, third spine $3\frac{1}{2}$, third ray $1\frac{9}{10}$; caudal $1\frac{3}{5}$, convex behind; least depth of caudal peduncle $3\frac{7}{8}$; pectoral $1\frac{2}{5}$, rays 8, VIII; ventral rays I, 5, fin $1\frac{3}{4}$ in total head length.

Brownish, marbled with irregular round, grayish, brown edged spots. Pure white round spot on cheek, on base of pectoral fin, on back of caudal peduncle of tail, and on end of lateral line. Pair of oval black ocelli between sixth, seventh and eighth dorsal rays. Length 183 mm. (Günther.)

Mauritius.

2108. D. 5216. Anima Sola Island, N. 44° W., 29.50 miles (N. lat. $12^{\circ}52'$, E. long. $123^{\circ}23'30''$), between Burias and Luzon. In 215 fathoms. April 22, 1908. Length 86 mm.

3224. D. 5388. Bagatao Island Light (outer), S. 86° E., 21 miles (N. lat. $12^{\circ}51'30''$, E. long. $123^{\circ}26'15''$), between Burias and Luzon. In 226 fathoms. March 11, 1909. Length 68 mm.

4278, 4279. D. 5482. Cagayan Grande Island (N.), N. 87° W., 4.5 miles (N. lat. $10^{\circ}27'30''$, E. long. $125^{\circ}18'$), between Samar and Leyte. In 67 fathoms. July 30, 1909. Length 38 to 44 mm. Two examples.

1686. D. 5408. Capitanillo Light, N. 25° W., 20.8 miles (N. lat. $10^{\circ}40'15''$, E. long. $124^{\circ}15'$), between

Cebu and Leyte. In 159 fathoms.
March 18, 1909. Length 80 mm.

2284. D. 5409. Capitanillo
Light, N. 19° W., 22 miles (N. lat.
 $10^{\circ} 38'$, E. long. $124^{\circ} 13' 8''$), between
Cebu and Leyte. In 189 fathoms.
March 18, 1902. Length 62 mm.

2318, 2319 D. 5402. Capitanillo
Island Light, S. 37° W., 16.1 miles
(N. lat. $11^{\circ} 11' 45''$, E. long. $124^{\circ} 15' 45''$), between Leyte and Cebu.
In 188 fathoms. March 16, 1909.
Length 71 or 72 mm. Two examples.

2832, 2833, ²⁸³⁴ D. 5403. Capitan-
cillo Island Light, S. 46° W., 15.7
miles (N. lat. $11^{\circ} 10'$, E. long. $124^{\circ} 17' 15''$), between Leyte and Cebu.
In 182 fathoms. March 16, 1909.
Length 63 to 79 mm. Five
examples.

1148

2129. D. 5318. N. lat. $21^{\circ}32'$,
E. long. $117^{\circ}46'$, China Sea
vicinity of Formosa. In 340
fathoms. November 5, 1908.
Length 78 mm. Large lernean on
left side.

4133. D. 5626. Kayoa Island
(S. E.), S. 5° W., 6.7 miles (N. lat.
 $0^{\circ}7'30''$, E. long. $127^{\circ}29'0''$),
between Gillolo and Kayoa
Island. In 265 fathoms.
November 29, 1909. Length 88 mm.

3288, 3289. D. 5625. Kayoa
Island (S. E.), S. 3° W., 6 miles
(N. lat. $0^{\circ}7'0''$, E. long. $127^{\circ}28'0''$),
between Gillolo and Kayoa
Island. In 230 fathoms.
November 29, 1909. ^{Length} 70 to 78 mm.

4180, 4181. D. 5411. Lavis
Point Light, N. 35° E., 4.7 miles
(N. lat. $10^{\circ}10'30''$, E. long. $123^{\circ}51'15''$),

between Cebu and Bohol. In 145 fathoms. March 23, 1909. Length 58 to 76 mm.

1925¹⁹²⁶, D. 5417. Lavis Point Light, N. 10° E., 3.5 miles (N. lat. 10° 10', E. long. 123° 53' 15"), between Cebu and Bohol. In 165 fathoms. March 25, 1909. Length ⁵⁷76 mm.

1682. D. 5503. Macabalan Point Light (Mindanao), S. 31° E., 6.6 miles (N. lat. 8° 36' 26", E. long. 124° 36' 8"), northern Mindanao and vicinity. In 226 fathoms. August 4, 1909. Length 90 mm.

D. 5517. Point Tagolo Light, S. 83° W., 10.5 miles (N. lat. 8° 45' 30", E. long. 123° 33' 45"), northern Mindanao and vicinity. In 169 fathoms. August 9, 1909. Length 44 to 98 mm. Five examples. The largest with large lernean fastened to eye.

1150

3144, 3147. D. 5519. Point Igolo
Light, S. 71° W., 8.7 miles (N. lat.
 $8^{\circ}47'$, E. long. $123^{\circ}31'15''$),
northern Mindanao and vicinity.
In 182 fathoms. August 9, 1909.
Length 70 to 86 mm. Three examples.
Largest with 3 large larvae
on left eye.

1364. D. 5179. Romblon Light,
S. 56° E., 4.50 miles (N. lat. $12^{\circ}38'$
 $15''$, E. long. $122^{\circ}12'30''$), vicinity
of Romblon. In 37 fathoms. March
25, 1908. Length 107 mm.

3322, 3323. D. 5404. Ponson
Island (N.), S. 79° E., 6.8 miles
(N. lat. $10^{\circ}50'$, E. long. $124^{\circ}26'18''$),
Dupon Bay, Leyte, and vicinity.
In 190 fathoms. March 17, 1909.
Length 78 to 81 mm.

3942. D. 5221. San Andreas
Island (W.), S. 57° E., 8.20 miles

(N. lat. $13^{\circ}38'15''$, E. long. $121^{\circ}48'15''$),
between Marinduque and Luzon.
In 193 fathoms. April 24, 1908.
Length 79 mm.

1738. D. 5477. Tacbac Point
(Leyte), S. 87° W., 11 miles (N. lat.
 $10^{\circ}44'45''$, E. long. $125^{\circ}12'30''$),
between Samar and Leyte,
vicinity of Surigao Strait. In
48 fathoms. July 29, 1909. Length
47 mm. Palatine teeth present.

3443. D. 5542. Tagolo Light, S. 75°
W., 12.5 miles (N. lat. $8^{\circ}47'15''$, E. long.
 $123^{\circ}35'0''$), northern Mindanao
and vicinity. In 200 fathoms. August
20, 1909. Length 54 mm.

3732. D. 5371. Tayabas Light
(outer), N. 43° W., 6 miles (N. lat. $13^{\circ}49'$
 $40''$, E. long. $121^{\circ}40'15''$), Marinduque
Island and vicinity. In 83 fathoms.
February 24, 1909. Length 91 mm.

Genus Pontinus Poey

Pontinus Poey, Mem. Hist. nat. Cuba,
vol. 2, p. 172, 1860. (Type Pontinus
castor Poey, monotypic.)

Sebastoplus Gill, Proc. Acad.
Nat. Sci. Philadelphia, vol. 15,
p. 208, 1863. (Type Scorpaena
kuhlii Bowdich, orthotypic.)

1114

stripes which in upper part of first band and in lower part of second, third and fourth break into brown dots. Light bars between darker contain one $\frac{1}{2}$ brownish yellow stripes. Dorsal with deep purple brown edge, becoming very deep brown lower.

Bluish white spots in rays of central part of dorsal, forming broken lines near posterior margin. Pectorals hyaline purplish.

7287. Paluan Bay, Mindoro. December 11, 1908. Length 203 mm.

8752. Parangpong Island. June 10, 1909. Length 288 mm.

8907. Rosa Island. June 17, 1909. Length 300 mm.

Suborbital keel of 3 or 4 distinct, differentiated spines and 2 prominent retrorse spines on each preorbital. No pit at occiput. Scales ctenoid, cheeks and opercles usually scaly. Anal with 5 to 9 rays. Pectorals not prominent, -all rays simple and only tips free.

Pontinus spilistius Gilbert

Pontinus spilistius Gilbert, Bull.
U. S. Fish Comm., vol. 23, pt. 2, p.
633, fig. 247, 1903 (1905) (type
locality, off Maui, in 95 to 152
fathoms). — Fowler, Mem. Bishop
Mus., vol. 10, p. 291, 1928 (type).

71771. Cebu market. September 3,
1907. Length 54 mm.

72481. Endeavor Strait. December 23,
1908. Length 160 mm.

72790. Camomo Island. December 3,
1907. Length 70 mm.

7247 to 7249. Masinloc Bay, Zambales.
November 22 and 23, 1908. Length 210 to
243 mm. Snout and chin covered with
round light gray dots over ground
color of deep brown. Dark brownish
purple band passes in front of dorsal
through eye, across cheek to base of
ventral, width not quite that of eye.
Four broad bands of same color
posteriorly to caudal peduncle. These
bands also contain 5 deep brown

1160

Depth $2\frac{7}{8}$; head 2 to $2\frac{1}{5}$, width 2 to $2\frac{1}{6}$. Snout $3\frac{1}{3}$ to 4 in head from snout tip; eye 4, 1 to $1\frac{1}{4}$ in snout, greatly exceeds interorbital; Maxillary reaches $\frac{2}{5}$ in eye, expansion $1\frac{4}{5}$ to $1\frac{7}{8}$, length $2\frac{1}{4}$ in head from snout tip; teeth minutely villiform, fine, in narrow bands in jaws, on vomer and palatines; interorbital $8\frac{1}{3}$ to $9\frac{1}{2}$, rather deeply concave. Gill rakers 9+9, of which 5 upper rudiments; pointed, $3\frac{1}{2}$ in eye; gill filaments $\frac{7}{8}$ of gill rakers.

Pair of moderate nasal spines; 1 antero-supraorbital, 3 postero-supraorbital, followed by pair of occipitals and nuchals; long postocular, then

1161

another still posterior long spine and finally spine at Supra-scapula; 10 preorbital spine directed down and back; suborbital stay with 4 spines, followed by uppermost of preopercular spines, below which on hind preopercle edge 2 others, much smaller; 2 rather widely divergent opercular spines, opposite; humeral spine small.

Scales $42 + 4$ close above along lateral line; tubes $23 + 1$ in lateral line; 9 scales above lateral line, 14 below; 13 predorsal forward to occiput (opposite upper hind preopercle edge); 6 postocular. Cheeks, opercle and top of head behind eyes scaled, rest naked. Scales

little smaller in caudal base than on body, greatly smaller and crowded in chest and breast, also prepectoral region and pectoral base. Slender, entire filaments, as pair at nasal rim, 1 at base of antero-supraorbital, 1 at base of medio-supraorbital, and at occipital. Row of short filaments along lateral line.

D. XII, 10, I, fourth spine $2\frac{3}{5}$ to $2\frac{7}{8}$ in total head length, fourth ray 3 to $3\frac{1}{8}$; A. III, 5, I, second spine $2\frac{1}{8}$ to $2\frac{1}{3}$, first ray 2 to $2\frac{1}{2}$; caudal $1\frac{4}{5}$, convex behind; least depth of caudal peduncle $4\frac{1}{3}$ to $4\frac{2}{3}$; pectoral $1\frac{2}{5}$ to $1\frac{1}{2}$, rays 17, all simple; ventral rays I, 5, fin $1\frac{4}{5}$ to $1\frac{9}{10}$ in ^{total} head length.

Pale brown, fins all much ¹¹⁶³
lighter. Iris pale. Dark blotch,
brown or blackish, on membranes
of seventh to tenth spines.
Hawaiian Islands.

U. S. N. M., No. 51644. Off
north coast of Maui, in 99 to
106 fathoms. Albatross Collection
4077. Length 86 mm. Type.

U. S. N. M., No. 51663. Hawaii.
Albatross Collection. Length
62 mm. Paratype.

Genus Dracundus Jordan and
Evermann

Dracundus Jordan and Evermann,
Bull. U. S. Fish Comm., vol. 22,
p. 209, 1902 (April 11, 1903).

(Type Dracundus signifer
Jordan and Evermann, monotypic.)

Body rather elongate, moderately
compressed. Head large, conic.
Snout moderate. Eye mostly
premedian, impinging on upper
profile. Maxillary extends below
eye, expanded terminally. Teeth
in jaws and on vomer, none on
palatines. Armature of head
moderately developed. Skin black,
opaque. Scales small, weakly
stained. Head largely bony. Fins
cartilaginous. Head and body with

p. 423 (Tokyo and Shimizu), p. 511 (Okunawa).

— Fowler, Proc. Acad. Nat. Sci. Phila.,

1918, p. 69 (Philippines and Bacon), — Fowler,

Copeia, no. 58, June 18, 1918, p. 64 (Philippines).

— Fowler and Bean, Proc. U. S. Nat. Mus., vol.

62, 1922, p. 58 (Cebu, Philippines). — Fowler,

Bishop Mus. Bull., no. 22, 1925, p. 13 (Guam).

Tentis albopunctatus (non Schlegel) Günther,

Journ. Mus. Godeffroy, band 2-3, left 5-6,

1874, p. 88 (Pelew Islands; Howland Island).

— Alleyne and Macleay, Proc. Linn. Soc.

New South Wales, vol. 1, 1877, p. 338 (Cape
Grenville). — Macleay, l. c., vol. 5, 1881,

p. 443 (on Günther). — Naville - Kent, Great

Barrier Reef, 1893, p. 286.

Siganus consobrinus Ogilby, Mem. Queensland

Mus., vol. 1, 1912, p. 54, plate 13. Moreton

Bay.

numerous, many large, dermal flaps. Dorsal fin deeply divided, spines 11 or 12 with fourth much elongated. Anal with 3 small spines, rays high. Caudal small. Pectoral with few branched rays above, ends of most all well free.

Chiefly characterized by its numerous flaps and elongated fourth dorsal spines.

Dracundus signifer Jordan and
Evermann

Dracundus signifer Jordan and
Evermann, Bull. ~~U. S.~~ ^{Comm.} Fish ~~Comm.~~, vol. 22,
p. 210, 1902 (1903) (type locality,
Honolulu). — Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 27, p.
126, 1904 (Honolulu). — Jordan
and Evermann, Bull. U. S. Fish
Comm., vol. 23, pt. 1, p. 470, fig. 207,
1903 (1905) (type; Honolulu). —
Jordan and Seale, Bull. Bur.
Fisher., vol. 25, p. 374, 1905 (reference).
— Fowler, Occas. Pap. Bishop Mus.,
vol. 8, no. 7, p. 387, 1923 (Honolulu);
Bull. Bishop Mus., no. 22, p. 27, 1925
(Honolulu); Mem. Bishop Mus., vol.
10, p. 292, 1928 (Honolulu; type).

band 80, heft 1, 1879, p. 393 (Queensland). ¹³⁵⁷

— Károli, Termesz. Füzetek, Budapest, vol. 5, 1881, p. 158 (Canton, Yokohama, Singapore).

— Steindachner and Döderlein, Denks. Akad.

Wiss. Wien, band 48, 1884, p. 25 (Tokyo). —

Franz, Abhandl. K. Bayer. Akad. Wiss., band 4, suppl. band 1, 1910, p. 50 (Yokohama and Aburatsubo).

Siganus fuscescens Jordan and Fowler, Proc.

U. S. Nat. Mus., vol. 25, 1902, p. 560 (Tokyo,

Yokohama, Misaki, Wakamoura, Kobe,

Onomichi, Hakata, Kawatama, Nagasaki).

— Jordan and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 35 (Cavite; Panay). — Evermann

and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 48 (Bacon, Jolo, San Fabian). ~~Seale and~~

~~Seale~~, Proc. U. S. Nat. Mus., vol. 33, 1907, p. 247

~~(Zambonga)~~. — Seale, Philippine Journ. Sci., vol. 5, no. 4, 1910, p. 284 (Sandakan, Borneo).

— Snyder, Proc. U. S. Nat. Mus., vol. 42, 1912, p.

Depth $3\frac{1}{4}$ to $3\frac{2}{3}$; head $2\frac{1}{3}$ to $2\frac{1}{2}$, width $1\frac{3}{4}$ to $2\frac{1}{8}$. Snout $3\frac{1}{8}$ to $3\frac{2}{3}$ in head from snout tip; eye $3\frac{2}{3}$ to $4\frac{1}{2}$, subequal to $1\frac{1}{4}$ in snout, greatly exceeds interorbital; maxillary reaches $\frac{1}{2}$ to $\frac{2}{3}$ in eye, expansion $1\frac{1}{3}$ to $1\frac{2}{5}$, length 2 to $2\frac{1}{6}$ in head from snout tip; teeth in moderate finely villiform bands in jaws, and vomer with triangular band, none on palatines; interorbital $6\frac{1}{4}$ to $6\frac{1}{3}$, deeply concave. Gill rakers 6 + 15, of which 6 above and 6 below rudiments; short tubercles $\frac{1}{3}$ to $\frac{2}{5}$ of gill filaments, which $1\frac{4}{5}$ to $2\frac{1}{4}$ in eye.

Pair of well developed nasal spines; broad, strong, antero-

supraorbital spine, 1 medio-supraorbital and 1 postero-supraorbital, followed by coronal and nuchal pair; Row of 4 postoculars to suprascapular spine, with oblique spine to suprascapula; 2 preorbital spines, anterior directed forward, posterior broad and directed down; suborbital stay without spines, except at hind end; 3 small spines on preopercular edge, upper largest, behind end of suborbital stay; 2 divergent opercular spines, upper little more posterior; rather strong humeral spine.

Scales 54 or 55 + 4 in lateral line; tubular scales 20 to 27 + 1 in lateral line; 9 or 10 scales above, 16 to 18 below; 9 to 12

predorsal forward to occiput;
 6 postocular. Head with rather
 large, fringed, fleshy flaps,
 first at front of snout, 1 above
 each nostril, 1 at upper front
 eye edge, high flap nearly half
 of eye behind upper median
 supraorbital spine, small
 one behind each occipital and
 nuchal spine, 1 from each
 preorbital spine with posterior
 much larger; 3 large ones
 along lower preopercle edge;
 other scattered small filaments
 on cheek, postocular, opercle
 and on body. Flaps not present
 in young.

D. XI or XII, 9, I or 10, I, first
 spine $2\frac{2}{5}$ to $3\frac{1}{2}$ in total head
 length, fourth spine $1\frac{1}{2}$ to $1\frac{5}{6}$,
 third ray $2\frac{1}{10}$ to $2\frac{1}{5}$; A. III, 5, I,

third spine $2\frac{3}{4}$ to 3, third ray
 $1\frac{4}{5}$ to 2; caudal $1\frac{1}{2}$, convex behind;
 least depth of caudal peduncle
 4; pectoral $1\frac{1}{4}$ to $1\frac{1}{2}$, rays
 II , 4, II ; ventral rays I , 5, fin
 $1\frac{3}{5}$ to $1\frac{3}{4}$ in total head.

Light brown. Black spot,
 about half diameter of pupil,
 submarginally on second
 membrane of spinous dorsal.
 Iris pale.

Hawaiian Islands.

U. S. N. M., no. 50886. Honolulu.
Albatross Collection. Length 107
 mm. Type.

~~Crossobastus~~ ^{corpagna}

1881

Sebastodes hexanema (Günther)

Sebastes hexanema Günther, Rep.

Voy. Challenger, vol. 1, pt. 6, p. 40, pl. 17, fig. B, 1880 (type locality, Ki Islands, in 129 fathoms). —

Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 8, p. 23, 1891 (Andaman Sea, in 188 to 220 fathoms); Cat. Deep Sea Fishes Indian Mus., p. 27, 1899 (Andaman Sea material).

— Weber, Siboga Exped., vol. 65, Fische, p. 491, 1913 (Timor Sea; Molor Straits).

A 634 and 12239. Simaluc Island. ¹²¹⁹

September 22, 1909. Length 190 to 270 mm.

A 740 and A 744. Sipadan Island.

September 28, 1909. Above slaty with more or less olive shade, becoming slate olive medially on side and nearly lemon yellow below soiled with dusky. Brown band behind preopercle margin. Dorsal like body but somewhat hyaline terminally; edge of soft dorsal purplish with submarginal olive yellow band, membranes much spotted and posteriorly striped with hyaline olive or brassy. Anal margin purplish, body of fin very dark olive ~~yellow~~.

Depth $3\frac{1}{3}$; head $2\frac{1}{4}$, width $1\frac{4}{5}$.
Snout $3\frac{1}{8}$ in head from snout tip; eye $4\frac{1}{8}$, $1\frac{1}{3}$ in snout, greatly exceeds interorbital; maxillary reaches $\frac{1}{2}$ in eye, expansion 2 in eye, length $2\frac{1}{2}$ in head from snout tip; band of vomerine teeth \wedge -shaped, that on palatine very narrow; interorbital 12, concave, with pair of longitudinal ridges.

Pair of small internasal spines; 2 postero-supraorbital spines, close set, each side, followed by beel ending in parietal and then one occipital each side; 2 postocular spines; 2 opercular spines, opposite; ridge of suborbital stay with 4 spines, followed by ^{uppermost} ~~long~~ spine of preopercle, which $2\frac{1}{5}$ in eye and furnished with a small outer

1183

prebasal spine; humeral spine short.

Scales 53 in lateral line; 21 filament bearing scales in course of lateral line; ~~maxillary~~ ~~scales~~ 6 scales above to middle of spinous dorsal, 9 below to anal origin; about 14 predorsal scales forward opposite hind ends of parietal spines; 4 scales below eye to ridge of suborbital stay and about 11 below to lower surface of head. Short antero-supraorbital filament, postero-supraorbital filament only little less than eye and short filament at each parietal spine.

D. XI, I, 9, third spine 3 in total head length; fourth ray $2\frac{1}{2}$; A. III, 5, I, second spine 3 or little longer than third, first ray $2\frac{1}{2}$; caudal $2\frac{1}{6}$, hind edge straight, base scaly; least depth

1184

of caudal peduncle $4\frac{3}{4}$; pectoral $1\frac{3}{4}$, shown with 13 simple rays; ventral rays $\overline{I}, 5$; fin length 2 in head.

Rose colored, with more or less indistinct blackish patches on back, one extending over the dorsal basally and occupying space between seventh and ninth spines. Length 137 mm. (Günther.)

Arafura Sea.

Genus Taenianotus Lacépède

Taenianotus Lacépède, Hist. Nat.
Poiss., vol. 4, p. 303, 1802. (Type
Taenianotus triacanthus Lacépède,
designated by Bleeker, Verh.
Kon. Akad. Wet. Amsterdam, vol.
16, no. 2, p. 6, 1876.)

Body elongately ovoid, strongly compressed, back elevated. Head large, compressed, deep. Snout moderate, oblique. Eye high, median in head length. Mouth low, moderate, lower jaw protruding. Maxillary oblique, reaches eye, expanded terminally. Teeth minute in jaws, on vomer, but none on palatines. Upper surface of head, and sides of head, armed with spines. Branchiostegals 7. Skin with minute scales. One high, elevated dorsal, not notched and last ray connected to caudal by membrane, spines 11 or 12, rays 11 or 12. Anal small, with 3 graduated spines and 7 rays. ~~Two~~ Caudal subtruncate. Pectoral moderate, rays simple. Ventral small, with spine and 5 rays.

1187

Jaenianotus triacanthus Lacépède

Jaenianotus triacanthus Lacépède,
Hist. nat. Poiss., vol. 4, pp. 303, 306,
1802 (no type locality; collection
given by Holland to France). —

^{Cuvier}
Valenciennes, Hist. nat. Poiss., vol.
4, p. 273, ¹⁸²⁹1829 (no locality);
Règne Animal, Cuvier, ed. ill., pl.
23, fig. 2, 1839.

— Bleeker, nat. Tijds. Ned. Indië,
vol. 8, p. (392) 411, 1855 (Amboina);
Act. Soc. Sci. Ind. Neerl., vol. 2,
no. 7, p. 4, 1857 (Amboina). —
Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 128, 1860 (copied);
Journ. Mus. Godeffroy, vols. 2-3,
pts. 5-6, p. 83, pl. 57, figs. ~~1-10~~
A-B, 1874 (Raiatea; Society
Islands).

1188

— Bleeker, Verh. Kon. Akad. Wet.
Amsterdam, vol. 16, no. 2, p. 82,
1876 (Amboina); Atlas Ichth.
Ind. Néerl., vol. 9, pl. (7), fig.
1, 18.

— Jordan and Seale, Bull. Bur.
Fishes, vol. 25, p. 378, 1905 (reference).
— Weber, Siboga Exped., vol. 65,
Fische, p. 503, 1913 (Karabelang).

— Fowler, Decas. Pap. Bishop Mus.,
vol. 8, no. 7, p. 387, 1923 (Hawaii);
Bishop Mus. Bull., no. 22, p. 27, 1925
(Honolulu); Mem. Bishop Mus.,
vol. 10, p. 296, 1928 (Malakalana;
Kahala; Ebon Island).

Taenianotus garretti Günther,
Journ. Mus. Godeffroy, vols. 2-3,
pts. 5-6, p. 83, pl. 57, fig. C, 1874
(type locality, Hawaiian Islands).
— Jordan and Seale, Bull. Bur.
Fishes, vol. 25, p. 378, 1905 (1906)
(reference).

Tetraroge vestitus De Vis, Proc.
Linn. Soc. New South Wales, vol. 8,
p. 446, 1883 (type locality, South
Sea).

Gymnapistus vestitus Fowler,
Mem. Bishop. Mus., vol. 10, p. 297,
1928 (compiled).

Amblyapistus vestitus Jordan and
Seale, Bull. Bur. Fisher., vol. 25,
p. 378, 1906 (reference).

Taenianotus citrinellus Gilbert,
Bull. U. S. Fish Comm., vol. 23, pt. 2,
p. 636, pl. 81, 1903 (1905) (type
locality, off Molokai, in 43 to 73
fathoms). — Jordan and Seale,
op. cit., p. 378 (reference).

Siganus luridus (Rüppell).

Amphacanthus luridus (Ehrenberg) Rüppell,
Atlas Reise. nordl. Afr. Fische, 1828, p. 45. Tor, Red Sea.
— Valenciennes, Hist. nat. Poiss., vol. 10, 1837, p.
¹⁵⁰~~110~~ (Massarah). — Grichenot, Notes J. Reunion,
vol. 2, 1862, p. 27. — Kner, Reise. Novara, Fische,
1865, p. 207 (Nicobar). — Klunzinger, Verh.
zool. bot. Ges. Wien, band 21, 1871, p. 503
(Koser, Red Sea).

Xenthis lurida Günther, Cat. Fish. Brit. Mus.,
vol. 3, 1861, p. 321 (Red Sea). — Klunzinger,
Fisch. Roth. Meer., 1884, p. 75. — Meyer, Ann.
Nat. Espun. Hist. Nat. Madrid, vol. 14, 1885,
p. 22 (Cebu). — Elera, Cat. Fauna Filip., vol. 1,
1895, p. 529 (Cebu). — Steindachner, Denks.
Akad. Wiss. Wien, band 71, 1907, p. 140 (Makall,
South Arabia).

1191

Depth 2; head $2\frac{1}{4}$. Snout $2\frac{4}{5}$
in head from snout tip; eye $4\frac{1}{3}$,
 $1\frac{2}{3}$ in snout; maxillary reaches
 $\frac{1}{2}$ in eye, expansion $1\frac{1}{3}$, length
 $2\frac{1}{5}$ in head from snout tip;
teeth villiform, very small, in
narrow bands in jaws, few on
vomer and palatines toothless;
interorbital concave. Gill rakers
small spinous tubercles.
~~basal spines strong, close set;~~
supraorbital spines 3, short,
strong, posterior longer; 2 short
strong spines each side of
occiput, 1 external and little
posterior to other; 2 small, weak
suprascapular spines; opercle
with 2 weak, curved, diverging
ridges, each ending in weak
spinous point; preopercle with
2 small triangular spines
above angle and very small one
below.

Lateral line with 22 tubes,

without cirri; scales small, very thin scarcely imbricate, on sides of head as small prickles. Supraorbital flap $1\frac{2}{3}$ times eye, fringed; front nasal flap $\frac{1}{2}$ of eye, fringed; small filaments on mandible and under surface of head.

D. XII, 10, I, third spine $1\frac{1}{3}$ in total head length, fifth ray $1\frac{2}{3}$?; A. III, 6, I, third spine 3, third ray $1\frac{2}{3}$; caudal $1\frac{1}{4}$, convex behind; caudal peduncle depth $3\frac{4}{5}$; pectoral 1, rays 14; ventral rays I, 5, fin $1\frac{1}{2}$ in total head length.

Yellow, tinged with brown, fins little darker. Few minute pearl colored spots on sides of head and front part of body.

East Indies, Polynesia, Hawaii.

U. S. N. M., No. 51634. Off
south coast of Motobai, to 73
to 73 fathoms. Albatross Collection
3849. Length 50 mm. Type of
Taenianotus citrinellus.

1193

Genus Setarches Johnson

Setarches Johnson, Proc. Zool. Soc.
London, p. 177, 1862. (Type
Setarches güntheri Johnson,
monotypic.)

Bathysebastes (Döderlein)
Steindachner and Döderlein,
Denks. Akad. Wiss. Wien, vol. 49
Math.-naturw. Kl., vol. 49,
p. 207, 1885. (Type Bathysebastes
albescens Steindachner and
Döderlein, monotypic.)

Lioscorpius Günther, Rep. Voy.
Challenger, vol. 1, pt. 6, p. 40, 1880.
(Type Lioscorpius longiceps
Günther, monotypic.)

Lythrichthys Jordan and Starks, Proc.
U. S. Nat. Mus., vol. 27, p. 140, 1904.
(Type Lythrichthys eulabes Jordan
and Starks, monotypic.)

1197
A 502. Balukbuluk Island. September
12, 1907. Length 315 mm.

4958. Alibijaban Island. March 6, 1907.
Length 282 mm, with out caudal filaments.

9942, 14507, 21130. Biri Channel.

June 2, 1907. Length 147 to 168 mm.

5371 and 5374. Cebu market. April
5, 1908. Length 250 to 320 mm.

9072. Curogoran, Malhon Island.

July 27, 1907. Length 293 mm. General
color slaty or steel gray, with slight
lavender shade on breast and belly.
Side of head and back with
numerous prussian blue spots
which dull purplish after exposure
to air; fuse along side into undulating
bars. Area below pectorals and lower

Body elongately ovoid, compressed. Head large, compressed. Snout rather long, obtuse. Eye small, high and premedian in head. Mouth large, lower jaw protruding. Maxillary extends below eye. Bands of teeth in jaws, on vomer and palatines. Bones of head cavernous, flat between eyes. No transverse groove at occiput. Branchiostegals 6 or 7. Pyloric appendages few. Scales cycloid, moderate. Head naked, opercle scaly. Lateral line broad scaleless groove, with 27 to 30 skinny tubes. Dorsal deeply notched, origin before pectoral, spines 12. Soft dorsal shorter, rays fewer. Anal with 3 strong, graduated spines. Pectoral broad, rays 20, most branched.

~~Setarches~~
~~Lythrichthys~~ viviparus (Schmidt)

Lythrichthys viviparus Schmidt,
Trans. Pac. Comm. Acad. Sci. U. S.
N. R., vol. 2, p. 106, fig. 17, 1931 (type
locality,

Caudal and paired fins uniform brown. Dark line from gill opening close below pectoral base, above which spots not extending. Another similar dark line along and below lower eye edge. Dorsals and anals dusky brown. Iris yellowish brown.

East Indies, Melanesia, Polynesia, Hawaii. The peculiar type of coloration, the long caudal filaments and obtusely rounded front or snout easily distinguish this species. In the young the trunk and tail are entirely spotted with dark and the anal with 1 or 2 longitudinal dark or deep brown bands within outer half.

Analysis of Species

1197

- a. Setarches. Snout longer than eye.
- b. Spinous dorsal higher than soft dorsal.
- c. Eye 4 to $4\frac{4}{5}$ in head, $1\frac{1}{4}$ to $1\frac{1}{2}$ in snout.
- d. Depth $3\frac{1}{5}$; head $2\frac{2}{5}$; soft dorsal height $3\frac{1}{2}$ in head. albercens.
- d.² Depth $2\frac{4}{3}$ to $2\frac{3}{4}$; head $2\frac{1}{8}$ to $2\frac{1}{4}$; soft dorsal height $2\frac{1}{4}$ to $3\frac{1}{4}$ in head. remigera.
- c.² Eye $5\frac{1}{5}$ to 6 in head. güntheri.
- c.³ Eye 6 to $6\frac{1}{5}$ in head, $1\frac{3}{4}$ to $1\frac{7}{8}$ in snout.
- e. Soft dorsal high as eye diameter, greatly lower than spinous dorsal. longimanus.
- e.² Soft dorsal $1\frac{1}{2}$ times eye diameter, nearly high as spinous fin. longiceps.
- b.² Spinous dorsal lower than soft dorsal; pectoral not reaching ventral; lower opercular spine

extends back beyond upper. 1198
marleyi.

a. Lythrictchthys. Snout equals eye;
D. XI, 10, soft fin height $2\frac{2}{5}$ to
 $2\frac{1}{2}$ in total head length. eulabes.

1199

Setarches albescens (Steindachner
and Döderlein)

Bathyssebastes albescens (Döderlein)
Steindachner and Döderlein, Denks.
Akad. Wiss. Wien, math.-naturw.
Kl., vol. 49, p. 207, 1885 (type
locality, Japan).

Setarches albescens Steindachner
and Döderlein, op. cit., vol. 53, pt. 1, p.
296, pl. 1, 1887. — Jordan and
Snyder, Annot. Zool. Japon., vol.
3, p. 99, 1901 (reference). — Jordan
and Starks, Proc. U. S. Nat. Mus.,
vol. 27, p. 138, 1904 (off Misaki).

Setarches guntheri (not Lowe) 1200
Steindachner and Döderlein, Denks.
Akad. Wiss. Wien, Math.-naturw.
Kl., vol. ~~49~~₅₃, p. 295, 1887 (Japan).

Setarches remiger (Gilbert and Cramer)

Scorpaena remiger Gilbert and Cramer, Proc. U. S. Nat. Mus., vol. 19, p. 418, pl. 40, 1897 (type locality, Off Hawaiian Islands, in 298 fathoms).

Setarches remiger Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 377, 1905 (copied). — Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 634, 1903 (1905) (Pailolo Channel, Oahu, Laysan, Hawaii, Maui, Kauai, in 97 to 352 fathoms). — Fowler, Mem. Bishop Mus., vol. 10, p. 291, 1928 (Hawaiian Islands).

Sebastes güntheri (not Johnson)
Alcock, Cat. Fish. Indian Mus.,
p. 28, 1899 (part).

of the first is 1/2, 1/4, 1/8, 1/16, 1/32, 1/64, 1/128, 1/256, 1/512, 1/1024, 1/2048, 1/4096, 1/8192, 1/16384, 1/32768, 1/65536, 1/131072, 1/262144, 1/524288, 1/1048576, 1/2097152, 1/4194304, 1/8388608, 1/16777216, 1/33554432, 1/67108864, 1/134217728, 1/268435456, 1/536870912, 1/1073741824, 1/2147483648, 1/4294967296, 1/8589934592, 1/17179869184, 1/34359738368, 1/68719476736, 1/137438953472, 1/274877906944, 1/549755813888, 1/1099511627776, 1/2199023255552, 1/4398046511104, 1/8796093022208, 1/17592186044416, 1/35184372088832, 1/70368744177664, 1/140737488355328, 1/281474976710656, 1/562949953421312, 1/1125899906842624, 1/2251799813685248, 1/4503599627370496, 1/9007199254740992, 1/18014398509481984, 1/36028797018963968, 1/72057594037927936, 1/144115188075855872, 1/288230376151711744, 1/576460752303423488, 1/1152921504606846976, 1/2305843009213693952, 1/4611686018427387904, 1/9223372036854775808, 1/18446744073709551616, 1/36893488147419103232, 1/73786976294838206464, 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1204

front and another above, also small postocular spine above upper hind edge of preopercle; 3 strong preorbital spines, lowest directed backward, anterior directed forward; spines of suborbital stay obsolete or scarcely developed; 5 preopercular spines, uppermost longest; 2 wide set opercular spines, opposite; humeral spine obtuse or scarcely developed.

Scales about 68 to 70 along and close above lateral line to caudal base and 5 more on latter; tubes 22 or 23 + 6 in lateral line; 6 rows of postocular scales; 8 or 9 vertical rows of scales below suborbital stay; 9 or 10 predorsal. Caudal base, pectoral base, breast, chest and belly with little smaller

scales. Lateral line formed of broad membranous canal, with slender sensory tube overlapping each segment or compartment in its course.

D. XII, 10, I, fourth spine $2\frac{3}{5}$ to $3\frac{1}{8}$ in total head length, third ray $2\frac{1}{4}$ to $3\frac{1}{4}$?; A. III, 5, I, third spine $2\frac{1}{2}$ to 3, first ray $2\frac{1}{2}$ to $2\frac{2}{3}$; caudal $1\frac{3}{4}$ to 2, rounded behind; least depth of caudal peduncle $5\frac{1}{5}$ to 6; pectoral $1\frac{1}{10}$ to $1\frac{1}{6}$, rays 21; ventral rays I, 5, fin $1\frac{2}{3}$ to 2 in total head length.

Uniformly pale brownish. Iris gray. Gaws pale. Membrane of spinous dorsal dark brownish. Ventral with brownish medianly.

Hawaiian Islands. In this fish the abdomen is a peculiar

1206

gray, often dark or dusky
about pectoral bases and
over breast as well, recalling
certain amiids and sciaenids,
as well as some bathypelagic
fishes.

U. S. N. M., No. 47726. Hawaiian
Islands. Albatross Collection.

Length 104 mm. Type.

U. S. N. M., No. 75828. Hawaiian
Islands. Albatross Collection
3476, Length 83 mm. Paratype.

1207

Setarches güntheri Johnson

Setarches güntheri Johnson,
Proc. Zool. Soc. London, p. 177,
pl. 23, 1862 (type locality,
Madeira). — J. L. B. Smith,
Trans. Roy. Soc. South Africa,
vol. 22, p. 97, pl. 6 C, 1934
(presumably fatal).

Depth $3\frac{1}{10}$; head $2\frac{1}{3}$. Snout $2\frac{3}{5}$ in head (figure $3\frac{1}{3}$); eye 6 ($5\frac{1}{5}$ on figure), $1\frac{1}{2}$ in snout; maxillary reaches hind eye edge?, expansion $1\frac{1}{5}$ in eye, length 2 in head from snout tip; narrow band of villiform teeth in each jaw and chevron-shaped band on vomer, also similar teeth on palatines; interorbital $4\frac{1}{2}$. Lower gill rakers 10, almost equal eye; gill filaments 3 in eye.

Small retrorse nasal spine; 1 antorbital spine projecting back over eye; two low, flattened occipital spines, and similar postorbital on each side; suprascapula and coracoid exposed, each ending in a ^{flat} spine; 3 preorbital spines, project down over maxillary, anterior small and antorse, other 2 retrorse,

1209

graduated and posterior longer;
3 spines at preopercle angle,
little less than eye, upper 2 on
one side almost parallel and
lower diverging (on other side 3
equally divergent) and 2 others
on lower margin, anterior smaller;
2 long diverging spines on opercle.

Scales about 95 in lateral
series; 26 or 27 perforations in
lateral line. Opercle and preopercle
above and below suborbital
ridge scaly, rest of head naked.

D. XVI, 10, fourth spine $2\frac{4}{5}$
in total head length, fourth ray
 $2\frac{3}{5}$; A. III, 5, third spine $3\frac{1}{4}$,
third ray $2\frac{3}{5}$; caudal $1\frac{3}{4}$,
truncated, least depth of caudal
peduncle 5; pectoral $1\frac{1}{5}$, rays
22 of which 3 or 4 lower ones
simple; ventral $1\frac{9}{10}$ in total
head length.

Light red brown, Fins light.
Length 190 mm. (J. L. B. Smith.)
natal.

12/0

Setarches longimanus (Alcock)
longiceps var.

Lioscorpius longimanus Alcock,
Illustr. Investigator, Fisher, pt.
2, pl. 10, fig. 3, 1894 (on Lioscorpius
longiceps Alcock 1891).

Lioscorpius longiceps (not Günther)
Alcock, Ann. Mag. Nat. Hist.,
London, ser. 6, vol. 8, p. 23, July 1891
(type locality, Andaman Sea, in
188 to 220 fathoms); Journ. Asiatic
Soc. Bengal, vol. 65, pt. 2, p. 312,
1896 (reference).

Setarches güntheri (not Johnson)
Alcock, Cat. Fish. Indian Mus., p.
28, 1899 (types). — Weber, Siboga
Exped., vol. 65, Fische, p. 492, 1913
(Bali Sea, Macassar Straits,
Molucca Straits, Arafura Sea,
Kei Islands, Flores Sea).

Depth $3\frac{1}{3}$; head $2\frac{1}{10}$. Snout 3
 in head from snout tip; eye 6,
 $1\frac{7}{8}$ in snout; maxillary reaches
 opposite hind eye edge, ex-
 pansion equals eye, length 2
 in head from snout tip; villi-
 form teeth in jaws, on vomer and
 palatines; interorbital little
 wider than eye. Gill rakers
 rather short and distant.

No true spines on top of
 head, but 2 low ridges on
 occiput and 1 behind either
 orbit end somewhat acutely,
 as also does a short ridge at
 anterior supraorbital angle
 and 1 above middle of orbit; 3
 free divergent spines on edge
 of preorbital; 4 or 5 spines,
 of which 3 upper usually large,
 on preopercle edge; 2 spines
 on opercle; suborbital stay

1213

prominent, with or without single small spine near its hind end.

Scales $70 + 5$ close above along lateral line (shown on figure 5); 10 above to soft dorsal origin, 20 below to anal origin. Lateral line prominent, broad, naked, with double tubule. Head naked, except scaly on cheek and opercle.

D. \overline{IX} or \overline{X} , \overline{I} , 10, \overline{I} , fourth spine $3\frac{3}{4}$ in total head length, first ray 5; A. \overline{III} , 5, third spine $4\frac{1}{5}$, first ray $4\frac{2}{5}$; caudal $2\frac{1}{5}$, emarginate; least depth of caudal peduncle $5\frac{1}{2}$; pectoral $1\frac{1}{2}$, rays 21 or 22; ventral rays \overline{I} , 5, fin $2\frac{2}{3}$ in total head length.

Red, with minute black specks, and with some dusky markings, usually fading. Length 138 mm. (Silcock.)

Andaman Sea, Bay of Bengal.

1214

Setarches longiceps (Günther)

Lioscorpius longiceps Günther, Rep.
Voy. Challenger, vol. 1, pt. 6, p. 40,
502, pl. 17, fig. C, 1880 (type
locality, Ki Islands, in 129
fathoms). — Jordan and
Richardson, Philippine Journ.
Sci., vol. 3, p. 51, 1910 (copied).

Setarches fidjiensis Günther, Ann.
Mag. Nat. Hist., London, ser. 5, vol. 2,
p. 179, 1878 (type locality, off Matuka,
Fiji, in 315 fathoms), Rep. Voy.
Challenger, vol. 1, pt. 6, p. 87, 1880
(Fiji); vol. 22, p. 19, pl. 1, fig. C,
1887 (type). — Jordan and Seale,
Bull. Bur. Fisher., vol. 25, p. 377, 1905
(reference). — Fowler, Mem. Bishop
Mus., vol. 10, p. 292, 1928 (copied).

1215

Depth $3\frac{1}{8}$ to $3\frac{1}{6}$; head $2\frac{1}{8}$ to $2\frac{1}{3}$, width 2 to $2\frac{1}{3}$. Snout $3\frac{1}{8}$ to $3\frac{1}{4}$ in head from snout tip; eye 6 to $6\frac{1}{5}$, $1\frac{3}{4}$ to $1\frac{7}{8}$ in snout, $1\frac{1}{8}$ to $1\frac{3}{4}$ in inter-orbital; maxillary reaches $\frac{3}{4}$ in eye, very slightly behind eye edge with age, expansion equals eye, length $1\frac{7}{8}$ to $1\frac{9}{10}$ in head from snout tip; bands of finely villiform teeth in jaws, on vomer and palatines; interorbital $3\frac{1}{2}$ to $4\frac{1}{3}$, low, nearly level. Gill rakers 4 or 5 + 10, lanceolate, length $2\frac{1}{5}$ in eye, little greater than gill filaments.

Scales 63 + 7 close along above lateral line; tubular scales 23 to 29 + 3 in lateral line; 9 or 10 scales above, 23 to 26

below, 11 to 13 predorsal and 4 or 5 postocular.

D. XI - I, 10, I, fourth spine 3 to $4\frac{2}{5}$ in total head length, second branched ray $2\frac{3}{5}$ to $2\frac{3}{4}$; A. III, 5, I, third spine 3 to $3\frac{1}{3}$, first ray $2\frac{2}{3}$ to $2\frac{3}{4}$; caudal $1\frac{3}{4}$ to $1\frac{4}{5}$, very slightly emarginate behind; least depth of caudal peduncle ~~$4\frac{1}{4}$~~ to $5\frac{1}{4}$; pectoral $1\frac{2}{5}$, rays II, 13, VII or VIII; ventral rays I, 5, fin $2\frac{1}{5}$ to $2\frac{1}{2}$ in total head length.

Largely pale brown, little lighter below. Iris pale gray. Fins all light colored.

East Indies, Philippines, Polynesia. Alcock's figure differs notably from Günther's in the low, soft dorsal and anal, in this respect agreeing with Lipthrictus eulabes Jordan and Starks.

The alleged characters of *Lythrichthys*, such as the concave interorbital and more strongly armed spines of the head are superficial. A comparison of the type species with the figure, shows this to be erroneous, for not only are the membranes of the spinous dorsal evidently torn, so as to produce a deeply gashed appearance, but the soft dorsal is shown wrongly. It is entirely too low, as the ends of the rays are broken off, so as to suggest the fin was elevated and more like the soft dorsal of Günther's figure. Moreover the last dorsal spines are shown as entirely too long, as the notch between the two fins is deep. Jordan and Starbuck say "Dorsals nearly separated; last 3 spines not graduated in size, last 2

very tiny and subequal in length,
the preceding one twice as long." ^{12/8}
Their figure, however, conveys
no such idea as this!

1249

3402. D. 5410. Bagacay Point
Light, S. 37° W., 7.2 miles (N. lat.
 $10^{\circ}28'45''$, E. long. $124^{\circ}5'30''$),
between Cebu and Leyte. In 385
fathoms. March 18, 1909. Length
67 mm.

4451. D. 5259. Caluya Island
(S.), S. 73° W., 12 miles (N. $11^{\circ}57'30''$,
E. long. $121^{\circ}42'15''$), off north-
western Panay. In 312 fathoms.
June 3, 1908. Length 68 to 72 mm.
Two examples.

2317. D. 5402. Capitanillo
Island Light, S. 37° W., 16.1 miles
(N. lat. $11^{\circ}11'45''$, E. long. $124^{\circ}15'45''$),
between Leyte and Cebu. In 188
fathoms. March 16, 1909. Length 78 mm.

2835. D. 5403. Capitanillo
Island Light, S. 46° W., 15.7 miles
(N. lat. $11^{\circ}10'$, E. long. $124^{\circ}17'15''$),
between Leyte and Cebu. In 183
fathoms. March 16, 1909. Length
150 mm. [1377.]

4480. D. 5110. Corregidor Light,
N. 20° E., 25 miles (N. lat. $13^{\circ}59'$
 $20''$, E. long. $120^{\circ}75'45''$), China
Sea off southern Luzon. In
135 fathoms. January 15, 1908.
Length 93 mm.

3643. D. 5564. Dammi Island Light
(N.), S. 85° W., 6.1 miles (N. lat. 5°
 $50'0''$, E. long. $120^{\circ}31'0''$), between
Jolo and Hawi Jawi. In 236
fathoms. September 21, 1909. Length
203 mm.

1879. D. 5247. Dumalag Island
(S.), S. 78° W., 3.8 miles (N. lat. $7^{\circ}2'$,
E. long. $125^{\circ}38'45''$), Gulf of Davao.
In 135 fathoms. May 18, 1908.
Length 113 mm.

3966. D. 5412. Lavis Point Light,
N. 21° E., 5.5 miles (N. lat. $10^{\circ}9'15''$, E.
long. $123^{\circ}52'$), between Cebu and
Bohol. In 162 fathoms. March 23,
1909. Length 80 mm.

4516. D. 5416. Lavis Point Light,
N. 12° E., 2.9 miles (N. lat. $10^{\circ}11'30''$,
E. long. $123^{\circ}53'30''$), between Cebu
and Bohol, In 150 fathoms.
March 25, 1909. Length 85 mm.

3350, 3351, D. 5418. Lavis Point
 Light, N. 16° E., 5.6 miles (N. lat. 10°
 $8'50''$, E. long. $123^{\circ}52'30''$), between
 Cebu and Bohol. In 159 fathoms.
 March 25, 1909. Length 38 to 84 mm.
 Three examples.

N. 4759. Malabrigo Light, N. 44°
 W., 32.50 miles (N. lat. $13^{\circ}12'45''$,
 E. long. $121^{\circ}38'45''$), east coast of
 Mindoro. In 283 fathoms. February
 2, 1908. Length 157 mm.

3859. D. 5621. Makyan Island
 (S.), N. 54° W., 3 miles (N. lat. $0^{\circ}15'0''$,
 E. long. $127^{\circ}24'35''$), between Gilolo
 and Makyan Islands. In 298 fathoms.
 November 28, 1909. Length 70 mm.

1753. D. 5265. Matocot Point,
 Luzon, S. 17° E., 3.30 miles
 (N. lat. $13^{\circ}41'15''$, E. long. $120^{\circ}0'50''$),
 Verde Island Passage and Batangas Bay.
 In 135 fathoms. June 6, 1908
 Length 80 mm.

1638. D. 5266. Matocot Point,
S. 22° E., 7 miles (N , ^{lat.} $13^{\circ}44'36''$, E. long.
 $59^{\circ}15''$), Verde Island Passage
and Batangas Bay. In 100 fathoms.
June 8, 1908. Length 90 mm.

Four examples. D. 5517. Point
Tagolo Light, S. 83° W., 10.5 miles
(N. lat. $8^{\circ} 45' 30''$, E. long. $123^{\circ} 33' 45''$), northern Mindanao and
vicinity. In 169 fathoms. August
9, 1909. Length 58 to 67 mm.

^{3145, 3146, 5145.}
D. 5519. Point Tagolo Light,
S. 71° W., 8.7 miles (N. lat. $8^{\circ} 47'$,
E. long. $123^{\circ} 31' 15''$), northern
Mindanao and vicinity. In 182
fathoms. August 10, 1909. Length 57
to 110 mm. Four examples.

^{2264 to 2266, 2268, 2269.}
D. 5523. Point Tagolo Light, S.
 48° W., 6.7 miles (N. lat. $8^{\circ} 48' 44''$,
E. long. $123^{\circ} 27' 35''$), northern
Mindanao and vicinity. August 10,
1909. Length 63 to 174 mm.

1225

3941. D. 5221. San Andreas Island
(W.), S. ~~27~~²⁷° E., ~~11.1~~^{5.5} miles (N. $13^{\circ} 38' 34''$ ¹⁵,
E. long. $121^{\circ} 48' 45''$), between Marinduque
and Luzon. In 193 fathoms. April
24, 1908. Length 78 mm.

2468 to 2470. D. 5476. San
Bernardino Light, S. 37° W., 13.5
miles (N. $12^{\circ} 56' 24''$, E. $124^{\circ} 25' 24''$),
east coast of Luzon. In 270 fathoms.
June 24, 1909. Length 72 to 150 mm.

3550, 3551. D. 5440. San Fernando
Point Light, N. 82° E., 23.1 miles
(N. lat. $16^{\circ} 33' 52''$, E. long. $119^{\circ} 52' 54''$),
west coast of Luzon. In 172
fathoms. May 10, 1909. Length 101 to
103 mm.

3687. D. 5441. San Fernando
Point Light, S. 87° E., 18.7 miles
(N. lat. $16^{\circ} 38'$, E. long. $119^{\circ} 57' 18''$),
west coast of Luzon. In 186 fathoms.
May 10, 1909. Length 50 mm.

aaaaa. markings darker than ground
color, chiefly formed as longitudinal
streaks.

~~Hyacinth root after inspection~~

4497 to 4500. D. 5580. *Vibutus* ¹²²⁶
Island peak, S. 82° E., 23.2 miles
(N. lat. $4^{\circ}52'45''$, E. long. $119^{\circ}6'45''$), vicinity of Darvel Bay, Borneo.
In 162 fathoms. September 25, 1909.
Length 80 to 90 mm.

4377. D. 5542. Tagolo Light,
S. 70° W., 13.2 miles (N. lat. $8^{\circ}48'30''$, E. long. $123^{\circ}35'30''$), northern
Mindanao and vicinity. In 200
fathoms. August 20, 1907. Length
96 mm.

2919. D. 5372. Tabayas Light
(outer), N. 5° W., 4.5 miles (N. lat.
 $13^{\circ}49'12''$, E. long. $121^{\circ}36'9''$), Marinduque Island and vicinity.
In 150 fathoms. February 24, 1909
Length 128 mm.

Scorpaena hyacinthina

(P) 21772 (47) Cebu ma
wan

21702 (60) Santiago
Pagaput B. Luzon

Feb 28, 1961

Setarches marleyi Fowler

Setarches marleyi Fowler, Proc. Acad.
Nat. Sci. Philadelphia, vol. 87, p.
398, figs. 28-29, 1935 (type locality,
Off Natal, South Africa).

1228

Depth $2\frac{2}{3}$; head $2\frac{1}{2}$, width 2.
Snout $2\frac{7}{8}$ in head from snout
tip; eye 6, 2 in snout, $1\frac{4}{5}$ in
interorbital; maxillary reaches
 $\frac{3}{5}$ in eye, expansion $1\frac{1}{8}$ in eye,
length 2 in head from snout
tip; teeth in villiform bands in
jaws, on vomer and palatines;
interorbital $4\frac{1}{4}$, low, slightly
convex. Gill rakers 7 + 14 (only
4 + 10 perfected, others rudimentary),
lanceolate, twice gill filaments
or 2 in eye.

Small antero-supraorbital
spine, directed back; 2 inferior
preorbital spines over middle
of maxillary; very low, small
spine on suborbital stay; 3

1229

spines at angle of preopercle edge, parallel, median slightly largest and directed back, also 2 small, inconspicuous ones on lower edge of preopercle; 2 rather strong divergent spines on opercle; pair of small parietal spines, directed back and laid close to predorsal region.

Scales $70 + 6$ close above along lateral line; tubes $22 + 6$ in lateral line, large, membranous-like capsules; 12 above, 27 below, 15 predorsal; 7 postorbital rows, 11 rows below suborbital stay. Scales with 4 or 5 basal radiating striae; circuli very fine, present though less developed apically.

D. XI, I, 10, I, fourth spine $3\frac{2}{5}$ in total head length, second

1230

ray $2\frac{2}{3}$; A. III, 5, I, third spine 3,
second ray $2\frac{3}{4}$; caudal 2,
truncate behind, slightly convex
as expanded; least depth of
caudal peduncle 4; pectoral $1\frac{1}{3}$,
rays I, 21; ventral rays I, 5,
fin 2 in total head length.

Drab to lavender or helio-
trope purple, under surface of
belly dark gray. Iris gray. Fins
and naked bony areas of head
all light or pale colored.
hatal.

A. N. S. P., no. 63797. Off hatal.
H. W. Bell Marley. Length 244
mm. Type.

Setarches
~~*Lythrichthys*~~ *eulabes* (Jordan and
Starks)

Lythrichthys eulabes Jordan and
Starks, Proc. U. S. Nat. Mus., vol. 27,
p. 140, fig. 11, 1904 (type locality,
Suruga Bay, in 60 to 70 fathoms).

and lower points produced with age,
 nearly or quite $\frac{1}{3}$ combined head and
 body; least depth of caudal peduncle
 $5\frac{1}{3}$ to 6 in head; pectoral $1\frac{1}{5}$ to $1\frac{1}{3}$;
 ventral $1\frac{1}{3}$ to $1\frac{3}{4}$.

Deep umber brown generally. Head
 posteriorly finely spotted with dusky,
 gray blue when fresh. Also upper
 portion of back, breast and belly
 more thickly spotted with gray blue,
 spots much smaller and more crowded
 and numerous below. Entire sides of
 body and tail with very numerous,
 close set, vertical, gray blue lines,
 many broken or connected to form
 brown or dark bars and lines on
 tail, where greatly numerous.

1232

Depth $2\frac{3}{5}$ to 3; head $2\frac{1}{4}$ to $2\frac{2}{5}$,
width $1\frac{2}{3}$ to $1\frac{4}{5}$. Snout $3\frac{1}{10}$ to
 $3\frac{1}{8}$ in head from snout tip;
eye $3\frac{1}{8}$ to $4\frac{1}{2}$, 1 to $1\frac{1}{3}$ in snout,
greater than ~~snout~~ interorbital
in young to subequal with age;
maxillary reaches $\frac{1}{2}$ to $\frac{3}{4}$ in
eye, expansion $1\frac{2}{5}$ to $1\frac{3}{5}$ in eye,
length $1\frac{3}{4}$ to 2 in head from
snout tip; teeth minutely villi-
form, in narrow bands in jaws
and band on vomer, but none
on palatines; interorbital 4 to
 $4\frac{1}{8}$, level. Gill rakers 4 + 10,
lanceolate, $1\frac{7}{8}$ in eye; gill
filaments $\frac{1}{2}$ of gill rakers.
Pair of minute nasal spines;
3 small, rather close-set supra-
orbitals each side; pair of
postoculars, rather high each
side and posterior much longer;
pair of rather long, low parietals;

followed by similar pair of occipitals; suprascapular spine each side; 3 preorbital each side, front one directed anteriorly, other 2 flare out and down posteriorly; suborbital stay with 3 low spines; 4 preopercular spines, upper longest or about $\frac{2}{3}$ of eye; 2 divergent opercular spines.

Scales 56 + 5 close along and above lateral line; 8 above, 20 below, 10 predorsal. Scales very small, finely adnate, only extending on fins on base of caudal. Scales with 5 or 6 basal radiating striae; circuli 15.

D. III, 9 or 10, membranes of spinous fin well incised though gash less than half membrane depth, fourth spine 2 to $2\frac{1}{4}$ in

1234

total head length, third ray $2\frac{2}{5}$ to $2\frac{1}{2}$; A. III, 5, second spine 2 to 3, second ray $2\frac{2}{3}$ to $2\frac{7}{8}$; caudal $1\frac{7}{8}$ to 2; least depth of caudal peduncle 5 to $5\frac{1}{8}$; pectoral $1\frac{1}{5}$ to $1\frac{2}{5}$, rays 15, all simple; ventral rays I, 5, fin $1\frac{1}{2}$ to $1\frac{3}{4}$ in total head length, spine $\frac{4}{5}$ of fin.

Light brown, finely dotted on head and body with dark brown. Iris gray. Fins all pale, membranes of spinous dorsal dotted with gray, blackish marginally. Chest dark brown.

Japan and . The figure by Jordan and Starck is quite faulty, showing the spinous dorsal membranes too deeply incised - and the last spine too long, also the soft

=

Lythruchthys euclabes

Jordan + Starks

32 ex. - 59 - 109 mm. - D. 53-18

Aug. 9, 1909

fin should be higher so the two ¹²³⁵
fins would appear more deeply
notched.

D. 5617.

November 27, 1909. Length 35 to 46 mm.
Four examples.

U. S. N. M., No. 50910. Suruga
Bay. O. S. Jordan and J. D.
Snyder. Length 43 mm. Type.

22905, 22907. D. 5292. Escarceo
Light, N. 36° W., 3.25 miles (N. lat.
 $13^{\circ} 28' 45''$, E. long. $121^{\circ} 1' 12''$),
China Sea, vicinity southern
Luzon. In 162 fathoms. July 23,
1908. Length 78 to 81 mm.

D. 5503. Macabalan Point Light
(Mindanao), S. 31° E., 6.6 miles
(N. lat. $8^{\circ} 36' 26''$, E. long. $124^{\circ} 36' 8''$),
northern Mindanao and vicinity.
In 226 fathoms. August 4, 1909.
Length 109 to 155 mm. 8 examples.

D. 5516. Point Tagolo Light
(Mindanao), S. 80° W., 9.7 miles (N.
lat. $8^{\circ} 46'$, E. long. $123^{\circ} 32' 30''$),
northern Mindanao and vicinity.
In 175 fathoms. August 9, 1909.
Length 79 to 81 mm. 6 examples.

D. 5517. Point Tagolo Light,
S. 83° W., 10.5 miles (N. lat. $8^{\circ} 45' 30''$,
E. long. $123^{\circ} 33' 45''$), northern

1244

Mindanao and vicinity. In 169
fathom. August 9, 1909. Length
72 to 95 mm. Nine examples.

D. 5519. Point Tagolo Light,
S. 71° W., 8.7 miles (N. Lat. $8^{\circ} 47'$,
E. Long. $123^{\circ} 31' 15''$), northern
Mindanao and vicinity. In
182 fathoms. August 9, 1909.
Length 71 to 134 mm. Nine examples.

D. 5518. Same data. Length 113 to 152
mm. 21 examples.

Genus Centropogon Günther

Centropogon Günther, Cat. Fish. Brit.
Mus., vol. 2, p. 128, 1860. (Type
Cottus australis ^{Shaw} ~~White~~, designated
by Bleeker, Verh. Kon. Akad. Wet.
Amsterdam, vol. 16, no. 2, p. 5, 1876.)

behind lower portion of shoulder and
few obscure waves on middle of
lower side, obscure in smaller
examples with entire back and side
behind ocular bar spotted with blue,
also blue ocular bar crossing cheek
more or less broken.

A 1386, 13384, 20803. Labuandata Bay,
Gulf of Boni, Celebes. December 18, 1909.
Length 148 to 210 mm.

17913, 17914, 18111. Tama Reke Island,
Celebes. December 21, 1909. Length 120 to 158
mm.

8410. Hokuro, Hoo Wan, Formosa. January 29,
1910. Length 104 mm.

Body compressed. Head large, compressed moderately. Maxillary reaches to or below eye. Teeth villiform, in jaws, on vomer and palatines. No transverse groove on occiput. Preorbital and preopercle spiniferous. No cleft behind fourth gill. Scales very small, distinct. One continuous dorsal, spinous fin beginning over vertical line of preopercle, spines $15\frac{1}{2}$ ^{or 16}, rays 8 or 9. Anal with 3 spines and 5 rays. Pectoral with 12 or 13 branched rays, without simple detached ray. Ventral with spine and 5 rays.

Australia.

Analysis of Species

- a.¹ Scales 55 to 58 in lateral line australis.
 a.² Scales 68 in lateral line marmoratus.

Centropogon australis (Shaw)

Cottus australis Shaw, Voy. New South Wales, White, p. 266, pl., 1790 (type locality, New South Wales).

— Walbaum, Artedi Pisc., vol. 3, p. 393, 1792 (on White). —

Lacépède, Hist. nat. Poiss., vol. 3, pp. 231, 246, 1802 (on White).

Apistus australis Cuvier, Hist. nat. Poiss., vol. 4, p. 398, 1829 (Port Jackson).

Gymnapistes australis Swainson, Nat. Hist. Animals, vol. 2, p. 266, 1839 (on White).

7677. Ulugan Bay, at island north of Oyster Inlet. December 28, 1908.

13 examples. Length 70 to 200 mm.

7702. Ulugan Bay. December 29, 1908.

Length 275 mm. Brown ocular and humeral bars. Blue bars across top of head.

Blue spots on side of head and anterior portion of back.

18736 and 18737. Varadero Bay. July 23, 1908. Length 30 to 167 mm.

6428 to 6430. West coast of Palani Island. November 18, 1908. Length 180 to 210 mm.

6988. West coast of Sabtan Island. November 8, 1908. Length 245 mm.

A1510. Bira Bira, Borneo. December 31, 1909. Length 215 mm.

A1365. Basa Island, Gulf of Boni, Celebes. December 17, 1909. 2 examples. Length 185 to 190 mm. Show very little of vertical bars. Larger with about 6 behind

Centropogon australis Günther, Cat.
 Fish. Brit. Mus., vol. 2, p. 128, 1860
 (Port Jackson; Sydney, p. 521
 [Emmanga [= Eromanga, New Hebrides]
 — Macleay, Proc. Linn. Soc. New South
 Wales, vol. 5, p. 436, 1881 (Port Jackson).
 — ~~McCulloch and Wh~~

— Jordan and Seale, Bull. Bur. Fisher.,
 vol. 25, p. 378, 1905 (reference). —
Fowler, Mem. Bishop Mus., vol. 10, p.
 296, 1928 (compiled). — McCulloch,
 Austral. Mus. Mem., no. 5, pt. 3, p.
 388, no. 28, 1929 (reference).
 — McCulloch and Whitley, Mem. Queensland
 Mus., vol. 8, pt. 2, p. 163, July 7, 1925
 (reference).

Yellow ground of cheeks and opercle shows as reticulating lines; 2 or 3 yellow lines from pectoral base toward chin. Iris dark brown. Dorsal dusky lemon yellow, color continued on upper half of caudal peduncle and includes also caudal fin. Anal membranes drab, spines and rays tinged bluish. Pectoral dusky, base pink. Ventral whitish, spines drab.

6440. Tilig, Lubang. July 14, 1908.
Length 260 mm.

12896 to 12898 [2138 to 2140], 13210 to 13215 [2141], 14339. Toba Island. December 14, 1909.
In some throat with blue bars mark lower level of orbit, then break into spots to level of pectoral and above. Only spots behind eighth dorsal spine. All with some spots on opercle.

Scorpaena jacksoniana Duoy and
Gaimard, Voy. Uranie, Zool., p. 327,
 1824 (type locality, "rade de
 Dec. 18,
 Sydney, au Port Jackson").

Tetraroge bellona de Vis, Proc. Linn.
Soc. New South Wales, vol. 9, pt. 3,
 p. 460, 1884 (type locality, "Queensland
 coast").

Tetraroge hamiltoni de Vis, op. cit.
 (type locality, Dunwich, Moreton Bay,
Queensland; Tweed River, New South
Wales).

4932, 4933, 4953. Tataan, Tawi Tawi Group. February 20, 1908. Length 198 to 217 mm. Middle of side light reddish brown, above with lemon yellow over dark olive on back, and lower surfaces shading to drab. From below fourth to sixth dorsal spines dull reddish septa bar extends obliquely forward, narrowing across front of pectoral base and bordered by dull purplish slate lines. Similar area on nuchal region, crossing eye and ending as band behind chin, limited by narrow slaty blue line from base of third dorsal spine. Back below spinous dorsal with numerous small slate blue spots, sometimes fused as lines. Series of narrow slaty bars across top of head and snout and 2 similar stripes under eye divide brown stripe into 3 equal parts.

1250

Depth $2\frac{2}{3}$ to 3; head $2\frac{3}{4}$ to $2\frac{7}{8}$, width $1\frac{3}{4}$ to $1\frac{4}{5}$. Snout $3\frac{1}{8}$ to $3\frac{1}{2}$ in head; eye $3\frac{2}{5}$ to 4, greater than snout or interorbital; maxillary reaches to eye or to $\frac{1}{5}$ in eye, expansion $2\frac{1}{4}$ to 3 in eye, length $2\frac{4}{5}$ to $3\frac{1}{4}$ in head; teeth fine, in villiform bands in jaws, none on palatines; interorbital $5\frac{1}{3}$ to 6, low, deeply concave. Gill rakers 3 + 11, low tubercles, greatly lower than gill rakers, which $\frac{1}{2}$ of eye. Low nasal spine each side; 1 antero-supraocular, long postero-supraocular, followed by rounded, small knob, then transverse. Parietal keel also followed by deep transverse groove and long dural each side and lateral fin position till opposite base of first dorsal spine; suprascapular spine small, preceded

1257

by 3 spines of which first very small knob close behind middle of hind edge of eye, others with long horizontal ridge; preorbital with lower spine in front and long hind spine subequal with eye; preopercular spines subequal, with 3 lower graduated ones; 2 long beels curved on opercle, each ending in short inconspicuous spine.

Scales only on trunk behind pectoral; scales 48 to 50 + 7 or 8 along and close above lateral line; 28 + 1 tubes in lateral line; 7 scales above, 23 below. Head naked, also predorsal, chest, breast, and area narrowly below dorsals along back. Scales with 6 to 10 basal radiating striae; 8 to 10 slender apical denticles; circuli rather fine.

D. XV, 8, or 9, fin origin over vertical limb of preopercle, third spine $1\frac{1}{4}$ to $1\frac{2}{5}$ in head, second ray 2 to $2\frac{1}{10}$, margins of anterior membrane of spinous dorsal all deeply notched; A. III, 5, I, second spine $1\frac{3}{4}$ to 2, second ray $2\frac{1}{8}$ to $2\frac{1}{4}$; caudal $1\frac{1}{3}$ to $1\frac{1}{2}$, little rounded behind; least depth of caudal peduncle $3\frac{4}{5}$ to 4; pectoral $1\frac{1}{8}$ to $1\frac{1}{5}$, rays I, 12 or I, 13; ventral I, 5, fin $1\frac{1}{3}$ to $1\frac{2}{5}$ in head.

Dull brown, scarcely paler below. With 6 rather irregular and variable dark or blackish, broad, transverse bands, all narrower than pale interspaces; first on interorbital posteriorly, through eye and down on cheek; second at spinous dorsal origin; third at middle of spinous dorsal;

1253

fourth from front of soft dorsal
down on anal; fifth at caudal
base narrow; sixth submarginal
on caudal. One or 2 dark to
blackish blotches on last dorsal
spines submarginally and small
one on soft dorsal subapically.
Fins all light brownish, except
as described and pectoral
sometimes with dark bar or
line subterminally. Iris dark
gray. Head often with scattered,
small, dark brown spots.

Queensland, New South Wales.

U.S.N.M., no. 59915. Port Jackson,
New South Wales. D. G. Stead.
Length 93 to 118 mm. Six examples.

1254

Centropogon marmoratus Günther

Centropogon marmoratus Günther,
Ann. Mag. Nat. Hist., London,
vol. 11, p. Proc. Zool. Soc. London,
p. 190, pl. 27, fig. B, 1862 (Type
locality, Moreton Bay, Queensland;
Ann. Mag. Nat. Hist., London, vol.
11, p. 136, Feb. 1, 1863 (type). —
Macleay, Proc. Linn. Soc. New South
Wales, vol. 5, p. 437, 1881 (copied).

— McCulloch and Whitley, Mem. Queensland
Mus., vol. 8, pt. 2, p. 163, July 7, 1925
(reference)

— McCulloch, Austral. Mus. Mem.,
no. 5, pt. 3, p. 388, Nov. 28, 1929 (reference).

1429
5773 and 5774. Sianga Bay. December
12, 1908. Length 200 to 240 mm.

4890. Siasi Island, Masbate. February 17,
1908. Length 240 mm.

6623. Simaluc, Bisibisi Island. September
23, 1909. Length 100 mm.

5028. South Taumindao Island. February 26,
1908. Length 156 mm.

8399. Surigao, Mindanao. May 8, 1908.
Length 30 mm.

15605 and 15607. Tagnaka Island. January
7, 1909. Length 168 to 180 mm.

15606. Tagnaka Island. August 10, 1909.
Length 168 mm.

13581 and 14415. Talise Island. November
9, 1909. Length 75 to 160 mm.

A1406. Tampotana, Island. December 21,
1909. Length 220 mm.

7368. Tara Island. December 15, 1908.
Length 203 mm.

Scales 68 in lateral line. D.
XVI, 9, third to sixth spines longest,
half long as head; A. III, 6,
second spine longer and
stronger than third. Yellowish,
marbled with brown. Length
75 mm. (Günther.)

Queensland.

Genus Pteroidichthys Bleeker

Pteroidichthys Bleeker, Act. Soc.
Sci. Ind. Neerl. (Amboin.), vol. 1,
p. 33, 1856. (Type Pteroidichthys
amboinensis Bleeker, monotypic.)

Body elongately ovoid, well
compressed, back little elevated.
Head large, pointed. Snout
rather long. Eye elevated, well
protruded in upper profile
of head, little premaxian in
head. Maxillary extends below
eye, expanded below. Mouth
rather large, lower jaw
projecting. Teeth in jaws and
on vomer, none on palatines.
Armature of head rather poorly
developed, preopercle and opercle

Analysis of the species.

a. Zebrasoma. Snout moderately pointed, not especially produced; dorsal spines moderate; variably yellow to olive or dusky.

b. Dorsal rays 30 to 32; dusky or deep brown, with transverse bands on head and body.
veliferum

bb. Dorsal rays 23 to 28.

c. Body brown, covered with small white dots.
gemmaatum

cc. Body yellow to olive or deep brown, sometimes with minute bluish dots or fine undulating lines.
flavescens

aaa. Blackish, head and shoulders reticulated with gray; caudal yellow; pectoral yellow-terminally.
xanthurum

aa. Laeprichthys. Snout produced; dorsal spines strong; uniform black.
rostratum

with few spines. Scales on body moderate or small, ctenoid, none on head. All fin rays, excepting ventrals, simple. Dorsals with membranes entire, larger spinous portion well set off by deep notch from soft fin, spines 11 and rays 11. Anal with 2 spines and 7 rays. Caudal rather large. Pectoral moderate, membrane entire. Ventral small.

An interesting genus characterized by its long supraorbital filament long as the head, simple fin rays and the anal fin with only two spines.

1258

Pteroidichthys amboinensis Bleeker

Pteroidichthys amboinensis Bleeker,
Act. Soc. Sci. Ind. Neerl. ~~(Amboina)~~,
vol. 1, ~~pages 1-4~~ no. 3, p. 4, 1856
(type locality, Manado); vol. 1, no. 5,
p. (5) 34, 1856 (Amboina). —
Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 127, 1860 (copied). —
Bleeker, Verh. Kon. Akad. Wet.
Amsterdam, vol. 16, no. 2, p. 57,
pl. 1, fig. 5, 1876 (Celebes; Amboina).

Snout short, deep, little produced.
Jaws with single row of strong, fixed
incisors. Dorsal fin with 3 to 5 flexible
spines. Soft dorsal and anal well elevated.
Ventral rays 5. Tail with pair of
erectile spines.

Indo-Pacific. A number of nominal
species have been described, most of
which appear to evolve into the few we
arrange below.

width $2\frac{1}{2}$. 1259

Depth $3\frac{1}{8}$; head $2\frac{1}{3}$, snout
 $2\frac{2}{3}$ in head from snout tip; eye
 $4\frac{1}{3}$, $1\frac{1}{2}$ in snout, greater than
interorbital; maxillary reaches
 $\frac{1}{2}$ in eye, expansion $1\frac{2}{3}$, length
 2 in head from snout tip;
bands of fine teeth in jaws,
and \wedge -shaped band on vomer;
interorbital $\frac{2}{3}$ of eye, deeply
concave. Deep quadrate pit at
occiput, with crenate crests each
side; no suborbital spines;
orbit without spines; opercle
with 2 subequal divergent spines.

Scales 40 in lateral series;
5 or 6 above lateral line and 16 or
17 below; lateral line little
curved, axial along side, complete.
Long supraorbital tentacle,
furnished with several short
filaments, greater than head,
also filaments near snout tip,

1260

above nostril and at end of
maxillary.

D. \overline{XII} , 11, fourth spine $1\frac{4}{5}$ in
total head length, third ray $1\frac{3}{4}$;
A. \overline{IV} , 7, second spine $2\frac{3}{4}$, second
ray $1\frac{3}{5}$; caudal $1\frac{1}{4}$, convex behind;
least depth of caudal peduncle 4;
pectoral $1\frac{1}{4}$, rays 15; ventral
rays \overline{I} , 5, fin $1\frac{3}{4}$ in total head
length.

Body rosy. Head below more
or less golden. Iris yellowish
or rosy. Tentacles mostly yellow-
ish. Dorsals, anal and caudal
blotched and clouded with
mauve. Pectoral rose, purple,
dotted with purplish and
transverse bluish bar at base.
Ventral varied red, ^{and} yellow,
and terminally purplish.
Length 8 1/2 in. (Bleeker.)
East Indies.

cheek and 3 below suborbital stay.
D. XIII, 9, fifth spine $2\frac{2}{5}$ in
fish without caudal, first ray
 $1\frac{4}{5}$ in total head length; A. III, 8,
second spine 3, second ray $1\frac{3}{5}$;
least depth of caudal peduncle
 $3\frac{1}{2}$; caudal to hind truncate
edge $3\frac{3}{4}$ in rest of fish, to ends
of filaments $1\frac{3}{4}$; pectoral $1\frac{3}{4}$,
rays I, 9, VIII; ventral rays I, 5,
fin 1 in head.

Rosy, below paler. Iris rose.
Head with 5 or 6 dark brown vertical
bars, also as many more but
much larger ^{or broader} on body, reflected
on dorsal fins. Spinous dorsal
membrane ~~rosy~~ clouded with
brown. Soft dorsal clear
rose, rays with blackish
^{anal rosy, with rows of dark or blueish dots.}
spots. Caudal rosy, with num-
erous blackish brown dots.

Genus Plectrogenium Gilbert

Plectrogenium Gilbert, Bull. U.S. ~~F.~~
Fish Comm., vol. 23, pt. 2, p. 634, 1903
(1904). (Type Plectrogenium nanum
Gilbert, monotypic.)

Body long, slender, compressed.
Head conic, compressed. Snout
short, conic. Eye very large,
impinges on upper profile,
mostly before front half of
head. Maxillary short, reaches
below eye. Teeth minutely
villiform. No occipital pit.
A series of very strong, paired
spines on median lateral bony
ridge of head. Gill rakers
lanceolate. Scales large, ctenoid,

12996 and 15155. Alibijaban Island, ¹¹²⁶
Luzon. Length 124 to 150 mm.

11199, 11201, 15691, 16015. Alimango
Bay, Burias Island. Length 105 to
115 mm.

9864. Balalo Bay, Palawan Island.
December 21, 1908. Length 140 mm.

13253. Bira-birahan Island.
December 31, 1909. Length 133 mm.

16276. Biri Channel. June 1, 1909.
Length 138 mm.

14897 to 14899. Biri Channel. June 2,
1909. Length 105 to 126 mm.

15969. Bugsuk Island. June 5, 1909.
Length 148 mm.

298. Busin Harbor, Burias Island.
March 8, 1909. Length 85 mm.

cover head and pectorals, besides
body. Spinous dorsal well
separated from second dorsal.
Second anal spine longest. Caudal
obtuse. Pectoral notched, with
upper half of branched rays and
lower half of simple rays.
Ventral moderate, with spine
and 5 rays.

1123

Acanthurus virgatus Vaillant and Sauvage,
Rev. Mag. Zool., tome 3, 1875, p. 283.

Hinohulu.

Zebrasoma agama Seale, Occas. Pap. Bishop
Mus., vol. 1, no. 3, 1901, p. 110. Agama, Guam.

Zebrasoma rostratum (non Günther) Jordan
and Seale, Bull. Bur. Fisher., vol. 25, 1905
(1906), p. 356 (Samoa).

Zebrasoma veliferum (non Bloch) Kendall
and Goldsborough, Mem. Mus. Comp.
Zool., vol. 26, no. 7, 1911, p. 311 (Tahaa,
Society Islands).

Plectrogenium nanum Gilbert

Plectrogenium nanum Gilbert,
Bull. U. S. Fish Comm., vol. 23, pt.
2, p. 634, fig. 248, 1903 (1905), (type
locality, Laysan Island; off
Maui; Kauai; in 143 to 357 fathoms).

— Jordan and Seale, Bull. Bur.
Fisher., vol. 25, p. 378, 1905 (reference).

— Fowler, Mem. Bishop Mus., vol. 10,
p. 291, 1928 (types).

deel 8, 1855, p. 276 (Ternate), p. 306 (Batu Island); deel 9, 1855, p. 106 (Vabu, Halmahera);
deel 11, 1856, p. 95 (Banda); deel 12, 1856, p.
230 (Batu Island), p. 508 (Wahai, Ceram);
deel 17, 1858-59, p. 130 (Atapupu, Timor);
deel 22, 1860, p. 113 (Buru). — Bleeker,
Act. Soc. Sci. Ind. Néerl., vol. 1, no. 5, 1856, p. 6
(Amboina); vol. 2, no. 7, 1857, p. 5 (Amboina).

Acanthurus altivelis Valenciennes, Hist. Nat.
Poiss., vol. 10, 1835, p. 249. East Indies and
Mauritius.

Zeus elevatus (Parkinson) Valenciennes, l.c.
(name in text).

Acanthurus foramensis Bleeker, Nat. Tijds.
ned. Indië, deel 15, 1858, p. (200) 208. Foram
Island. — Günther, Cat. Fish. Brit. Mus.,
vol. 3, 1861, p. 343 (copied). — Jatayu and
Lentz, Abhandl. Senckenberg. Ges., band 24,
1898, plate 36, fig. 11.

1272

Depth 4 to $4\frac{1}{5}$; head $2\frac{2}{3}$ to $2\frac{3}{4}$, width $1\frac{3}{5}$ to $1\frac{2}{3}$. Snout 4 to $4\frac{1}{8}$ in head from snout tip; eye 3 to $3\frac{1}{5}$, greatly exceeds snout or interorbital; maxillary reaches $\frac{1}{8}$ to $\frac{1}{5}$ in eye, expansion 3 to $3\frac{1}{2}$ in eye, length $3\frac{1}{4}$ to $3\frac{2}{5}$ in head from snout tip; bands of very fine or minute teeth in pairs, on vomer and palatines; inter-orbital $5\frac{3}{4}$ to $6\frac{1}{5}$, low, concave, ~~pair of small nasal spines~~, Gill rakers 4 or 5 + 11 or 12, lanceolate, subequal with gill filaments, or $\frac{1}{6}$ of eye. Pair of small nasal spines; 5 to 7 low supraorbital spines; spines in pairs with posterior of each pair much the larger, first at preorbital, pair below middle of eye on suborbital stay followed by pair below hind eye edge and

final pair at preopercle, last of which equals $\frac{1}{2}$ of eye; pair of moderate parietal spines; 2 postocular spines followed by another spine at suprascapula; opercle with rather small spine above, and longer parallel ridge below with 2 spines, posterior greatly larger.

Scales 27 or 28 + 2 in lateral line; 3 above, 7 below, 14 predorsal forward to last supraorbital spine; 5 or 6 scales below suborbital stay to lower preopercular edge as counted across cheek. Pectoral covered with fine, numerous, close set scales basally. Scales little smaller on chest and breast than on rest of body. Scales with 12 or 13 basal radiating striae; single row of 28 to 30 short apical

1274

denticles, with 2 or 3 transverse series of basal elements; circuli fine basally, coarser apically.

D. X — II, 7, fourth spine $2\frac{1}{3}$ to $2\frac{2}{5}$ in total head length, first ray $2\frac{1}{2}$ to $2\frac{3}{5}$; A. III, 5, I, second spine $2\frac{1}{5}$ to $2\frac{1}{4}$, first ray $2\frac{2}{5}$ to $2\frac{3}{5}$; caudal $1\frac{3}{4}$ to $1\frac{4}{5}$, hind edge very slightly emarginated; least depth of caudal peduncle $3\frac{4}{5}$ to 4; pectoral $1\frac{3}{5}$ to $1\frac{2}{3}$, rays I, 13, IX; ventral $1\frac{1}{2}$ to $1\frac{4}{5}$ in ^{total} head, rays I, 5.

Uniformly pale brown. Iris pale like body, also fins.

Hawaiian Islands. In life said to be nearly uniform rose red. Each membrane of spinous dorsal apically with dark blotch.

1275

U. S. N. M., No. 51598. Off north
coast of Maui, in 220 to 238
fathoms. Albatross Collection (1080).
Length 70 mm.

U. S. N. M., No. 51664. Hawaii.
Albatross Collection (1081, 1082, 982).
Both of last two with dark or
black blotch on second dorsal.
Length 51 to 55 mm. Three examples.

U. S. N. M., No. 51675. Hawaii.
Albatross Collection (1069 to 1072th;
984). Small ones with dark
blotch on second dorsal. Length
57 to 70 mm. Five examples.